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THE OIL WEEKLY

OIL & GAS ENGINEERING

News Statistics

In the production of oil the greatest savings are effected through standardization of drilling and pumping equipment.

IDECO has built a name for itself—first by building a structural steel derrick that has never been successfully imitated. Secondly by developing a line of drilling and pumping equipment to meet modern conditions — operating efficiently and economically.

Literature on request.

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Branches in every Important Oil Field

IDECO

May 15, 1931

ADVERTISERS INDEX, PAGE 97 EDITORIAL INDEX, PAGE 19

DIRECTOR OF SUBTERRANEAN *explorations*

Any time you stick your drill stem so it has to be cut out, or any time you decide that a new screen in an old well will substantially improve its production—you're ready for Henry Fouts and a J. S. Abercrombie Outside or Inside Cutting Tool.

The minute Henry steps on to your derrick floor, you can check the responsibility to him and his famous tools, and forget it. If 25 years of drilling and cutting experience, and cutting tools that have been field proven for nine years can get the job done, your crew and Henry Fouts will have the pipe out of the hole in record time.

As a director of subterranean explorations for stuck drill stem, or clogged well screen, Henry Fouts ably exemplifies the caliber of men who render J. S. Abercrombie Red Ball Cutting Service. Moreover, the results he delivers clearly reveal the time-tried caliber of J. S. Abercrombie Cutting Tools. You command both on a moment's notice when you call for J. S. Abercrombie Red Ball Cutting Service.

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Ford de Cordova, Phone 584

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The Finest Materials

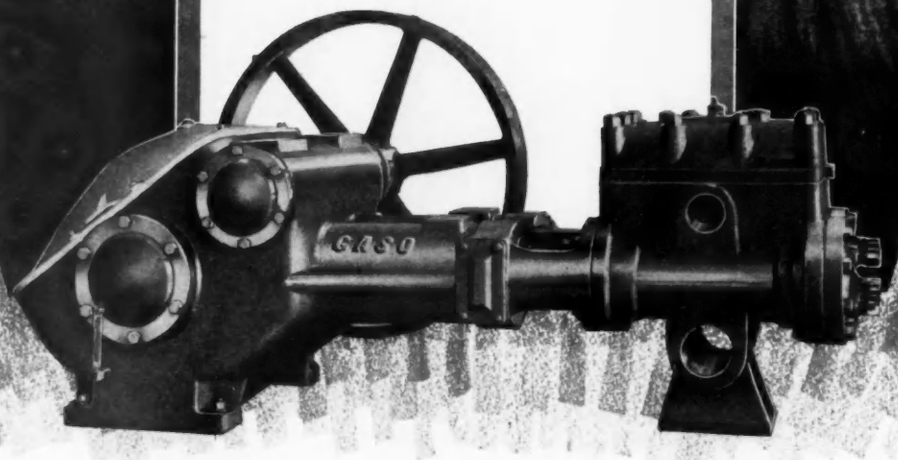
—the Foundation of GASO Pump Economy

Materials for every part of every GASO Pump are painstakingly selected both for suitability and for quality. These finest of materials are the foundation upon which correct design and precision workmanship build the outstanding endurance and economical performance of GASO Pumps.

GASO PUMP & BURNER MFG. CO. - - Tulsa, Okla.

Export Office: New York, N. Y.

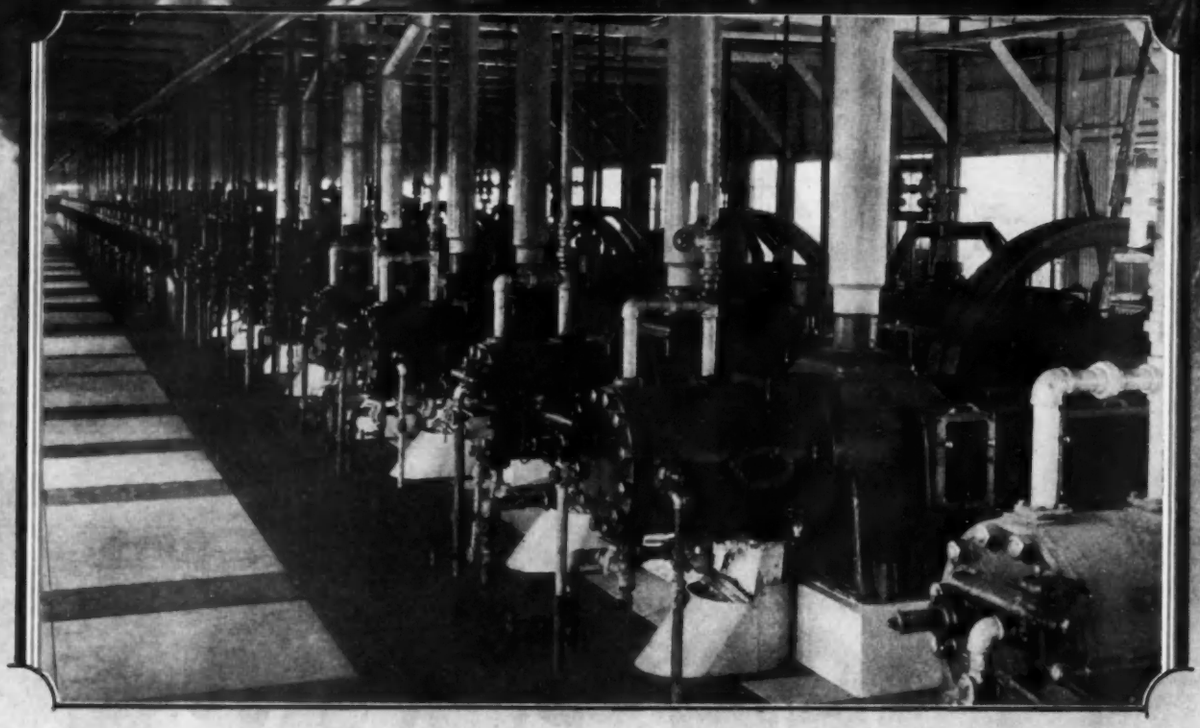
Shown below is GASO Timken Bearing Enclosed Power Pump, Fig. 1508. Interchangeable liners give capacities ranging from 63 bbls. per hour at 800 lbs. working pressure to 250 bbls. per hour at 250 lbs. pressure. Arranged for any type of drive desired.



GASO PUMPS

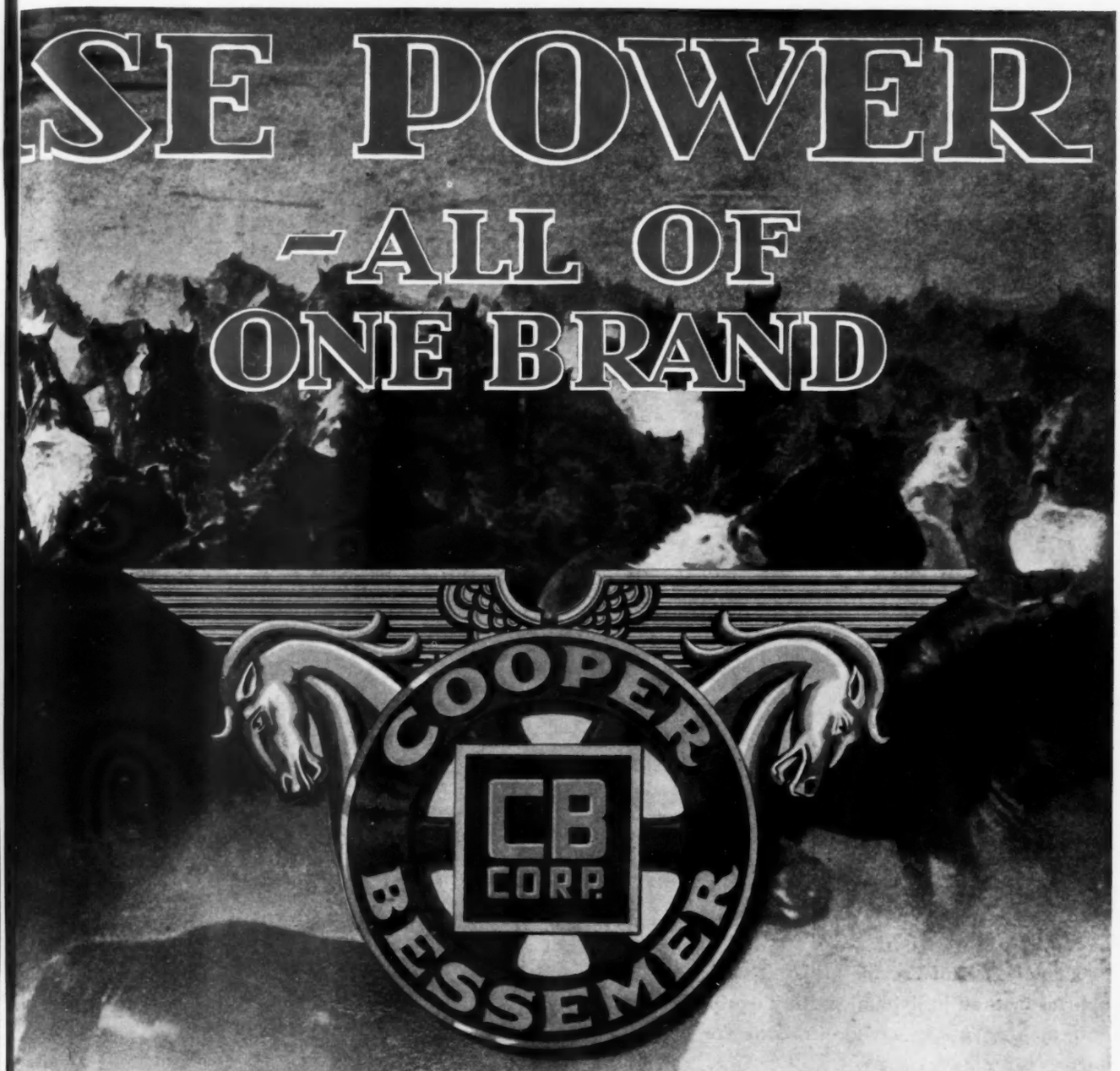
FOR EVERY OIL INDUSTRY NEED

7000 HOR



Probably the largest number of engines in any compressor station in the world. Industrial Fuel Supply Co., Santa Fe Springs, Calif.

YOU'RE ALWAYS SAFE IN C



7000 horsepower — 38 twin engines — all under one roof, and all built by the same company!

Here is a substantial expression of satisfaction and confidence. This compressor station, probably the largest in number of engines in the world, depends entirely upon the good performance of Cooper-Bessemer two and four cycle power units.

The men responsible for the profitable operation of this and other big stations over the country know the economy and durability of machines bearing the Cooper-Bessemer trade-mark.

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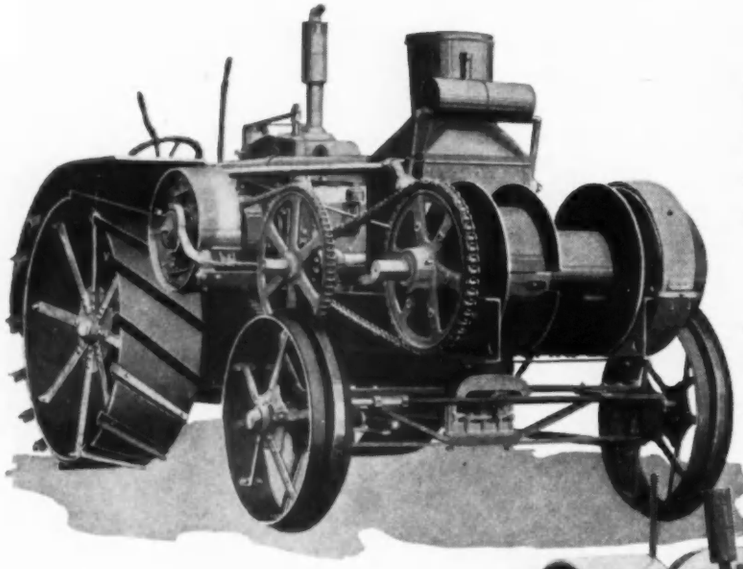
H O O S I N G A C O O P E R - B E S S E M E R

NOW... as never before

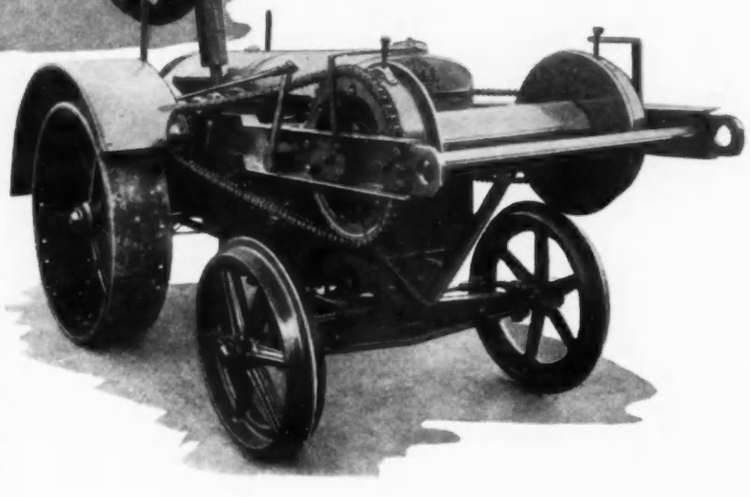
RUMELY OIL PULL TRACTOR and RUMELY DO ALL Industrial Winch TRACTOR savings

DEMAND ATTENTION



One Rumely Winch-Tractor easily handles from 30 to 50 wells, saving several times its price in cost of rig fronts and draw works for individual pumping units.

One Rumely Winch-Tractor handles enough wells to save its price in the cost of repairs on any individual pumping equipment used for pulling oil wells.



A Rumely Winch-Tractor pulls oil wells much faster than individual pulling equipment, making a big saving in cash for labor.

A Rumely Winch-Tractor makes a big saving in bailing, cleaning out and swabbing oil wells.

A Rumely Winch-Tractor makes a big saving to any lease in development work, hoisting materials, skidding derricks, moving boilers and grading roads—in fact, never needs to be idle.

There are many Rumely Winch-Tractors ten and twelve years old still making big savings. You are actually losing money every day you wait to install this equipment.

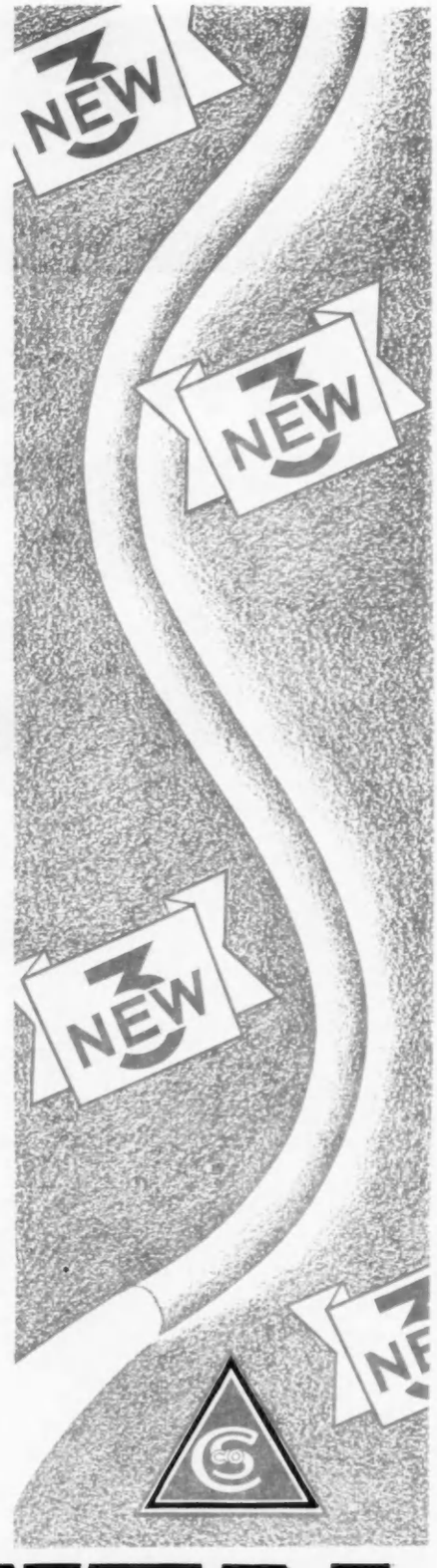
—Send all inquiries and orders to - - -

FRED E. COOPER

Special Rumely Representative and Developer of Oil Field Machinery

18 S. MADISON TULSA, OKLA.

3 NEW



TYPES OF HOSE FOR OIL COUNTRY USE

HEL-FI HIGH PRESSURE STILL CLEANING HOSE

HEL-FI'S tube will withstand the high temperatures of steam conveyed through it and is oil resisting. The cover is of three ply asbestos, over which is placed a close winding of wire to fortify the inner structure against external temperatures which rise as high as 900° F. HEL-FI Special Couplings are safe and efficient and will screw on easily over the wire winding.

SUPER-WILCOX ROTARY HOSE

A powerful hose that can endure the terrific punishment inflicted by extreme conditions of deeper drilling. Expansion and elongation, the chief causes of Rotary Hose failure, have been eliminated without loss of flexibility.

ROUGH RIDER CORE DRILL HOSE

A companion to the well-known Rough Rider Rotary Hose . . . both in performance and construction. Capably handles the higher pressures created by the large core drills of today. Is ruggedly constructed, flexible, has a tough rubber cover and heavy substantial couplings.

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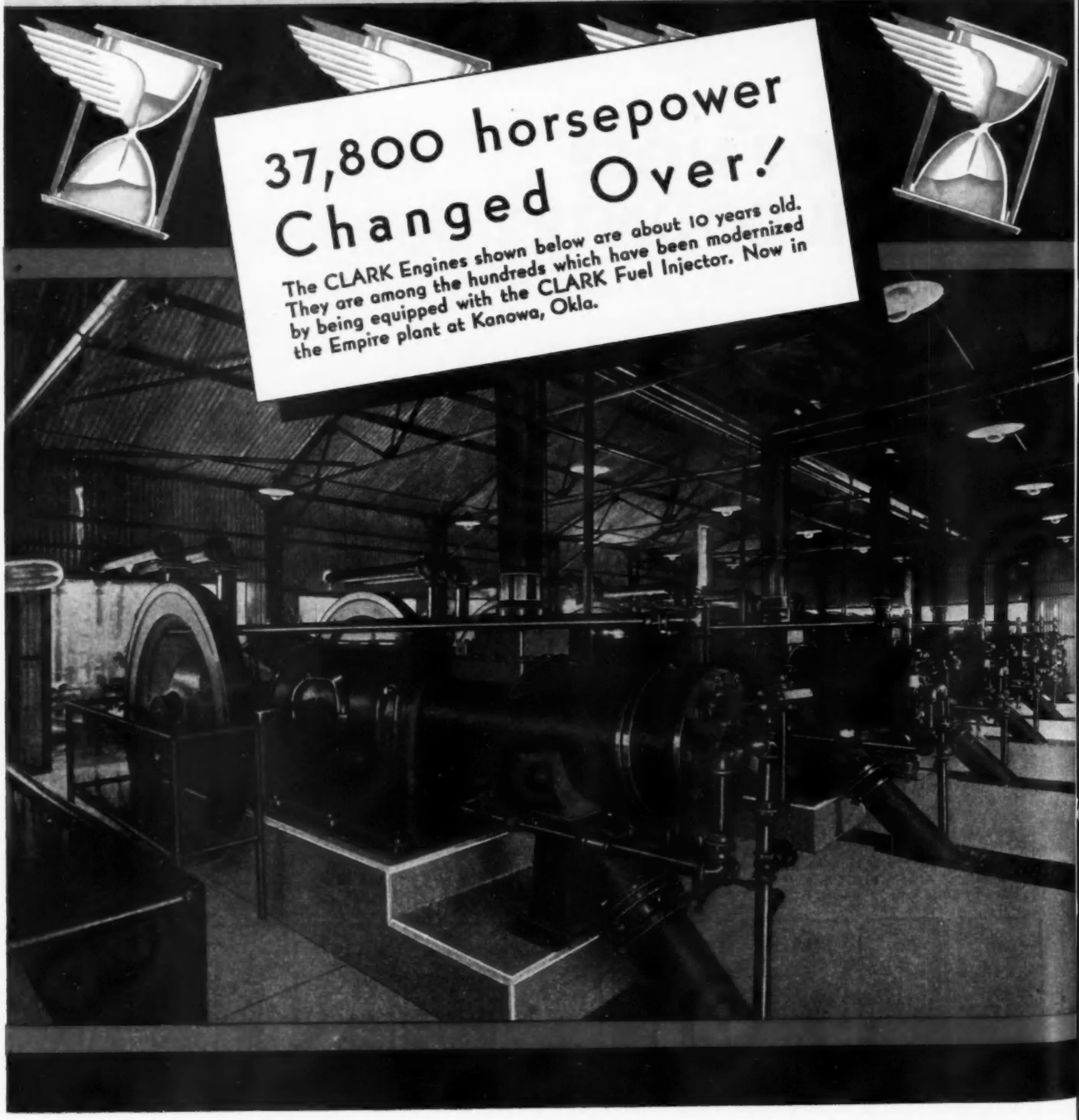
CMR-2 OW-5-15-GRAY

CONTINENTAL

4 YEARS

have demonstrated


37,800 horsepower
Changed Over!
The CLARK Engines shown below are about 10 years old. They are among the hundreds which have been modernized by being equipped with the CLARK Fuel Injector. Now in the Empire plant at Kanowa, Okla.

OF USE

the efficiency of the

CLARK

FUEL INJECTOR

IT IS now four years since the introduction of the CLARK Fuel Injector gave CLARK 2-Cycle Gas engines a fuel efficiency unequalled except perhaps by the best 4-cycle machines when at their best in test condition. This Fuel Injector — now long accepted as successful and desirable — is but one of the many improvements in gas engine design or construction pioneered by Clark Bros.

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Where Dependability is Vital

In the oil fields—where uninterrupted service is vital—the selection of wire lines deserves more than ordinary care. Because of their proved dependability and greater economy, most operators specify American Steel & Wire Company Wire Lines. It will pay you to know why in detail. Our engineers, in the oil country, will gladly assist you in solving your wire line problems.

AMERICAN STEEL & WIRE COMPANY
By using a Flattened Strand Line for Rotary Drilling, a much larger per cent of the surface of the strand is put in contact with the sheave or drum, in fact, the wearing surface is from 100 to 150 per cent greater than in lines of other constructions.

1831 COMMEMORATING 100 YEARS of PROGRESS in WIRE MAKING 1931

AMERICAN STEEL & WIRE COMPANY

208 South La Salle Street, Chicago SUBSIDIARY OF UNITED STATES STEEL CORPORATION And All Principal Cities

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WHERE CORROSION IS A PROBLEM

★ ★ ★

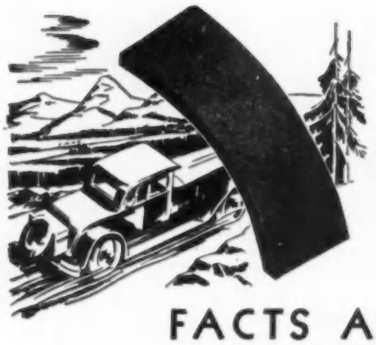
Wrought-iron is effective against corrosion and in actual service has proved its economy in reducing the heavy toll of "hot spots." Byers Genuine Wrought-Iron Pipe is the standard of wrought-iron quality, and experience indicates the places where its use will create balanced pipe lines which adequately meet

BYERS • GENUINE • WROUGHT-IRON PIPE

BYERS • GENUINE • WROUGHT-IRON PIPE

varying soil conditions. Where corrosion is a problem, there's a place for Byers Genuine Wrought-Iron Pipe in any "pipe prescription." New things are being learned all the time about corrosion, and constant and widespread study of it equips our engineers to give you expert and up-to-date counsel. A. M. Byers Company, Pittsburgh, Pa. Established 1864.

AN INVESTMENT – NOT AN OUTLAY



stamina!

FACTS ABOUT ONE OF THE ROAD TESTS THAT PROVED THE QUALITY OF MULTIBESTOS LX

(LATEX BONDED)

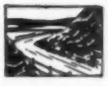
Here are some of the facts based on the reports received from part of the 10,000 mile road test made to supplement the Multibestos L X (Latex Bonded) laboratory tests.

SUMMARY OF CONDITIONS AND RESULTS

Brake Lining Multibestos L X (Latex Bonded) regular stock

Automobile A popular make of light car

Weather Hot—dry—cool—damp—rainy



Roads Concrete—macadam—dirt—muddy—rutted

Territory New Hampshire—over White Mountains

NATURE OF TEST

3100 stops made on mountain grades after acceleration to 45 and 55 m.p.h.
231 stops in rapid succession or as fast as car would accelerate.
2900 stops made in normal city and rural traffic.
3000 stops on hilly roads—car accelerated to 45 and 55 m.p.h.
9231 stops—total for this portion of the road test.

RESULTS . . .

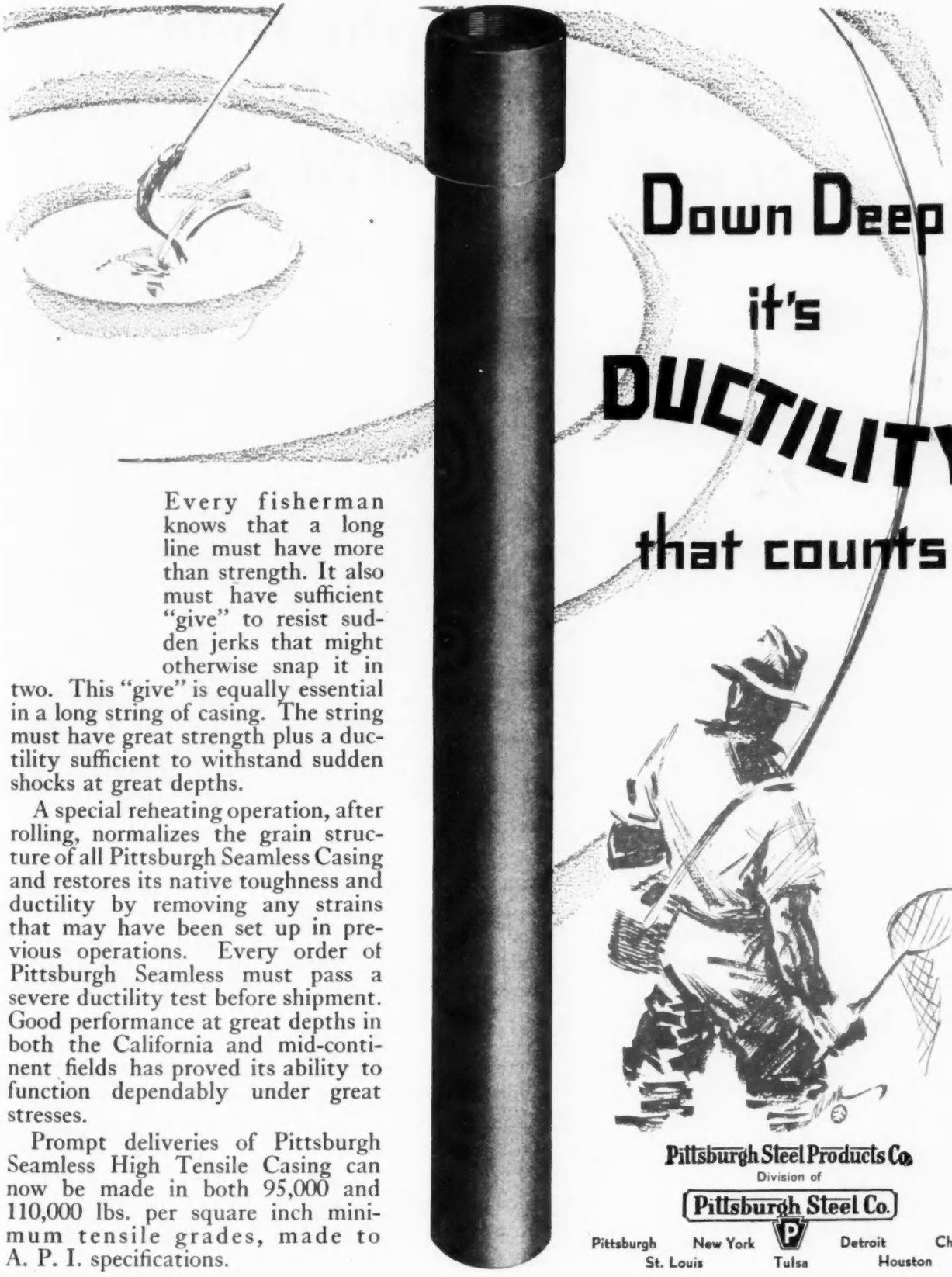
Multibestos L X (Latex Bonded) shows a very low wear factor—no swelling—drums entirely free from scoring—no adjustments necessary.

There can be no question as to the ability of Multibestos L X to stand up under ANY driving conditions — to give complete satisfaction to the car owner. We shall be glad to send you on request the complete details of this scientifically conceived and laboratory-controlled brake lining.

• • MULTIBESTOS COMPANY • •

GENERAL SALES OFFICES, 235 HARVEY STREET, CAMBRIDGE B, MASS.

DALLAS, 2622 Cedar Springs FACTORY: WALPOLE, MASS. OAKLAND, CALIF., 4000 East 8th Street



Down Deep it's DUCTILITY that counts

Every fisherman knows that a long line must have more than strength. It also must have sufficient "give" to resist sudden jerks that might otherwise snap it in two. This "give" is equally essential in a long string of casing. The string must have great strength plus a ductility sufficient to withstand sudden shocks at great depths.

A special reheating operation, after rolling, normalizes the grain structure of all Pittsburgh Seamless Casing and restores its native toughness and ductility by removing any strains that may have been set up in previous operations. Every order of Pittsburgh Seamless must pass a severe ductility test before shipment. Good performance at great depths in both the California and mid-continent fields has proved its ability to function dependably under great stresses.

Prompt deliveries of Pittsburgh Seamless High Tensile Casing can now be made in both 95,000 and 110,000 lbs. per square inch minimum tensile grades, made to A. P. I. specifications.

Pittsburgh Steel Products Co.
Division of
Pittsburgh Steel Co.

Pittsburgh · New York · Detroit · Chicago
St. Louis · Tulsa · Houston

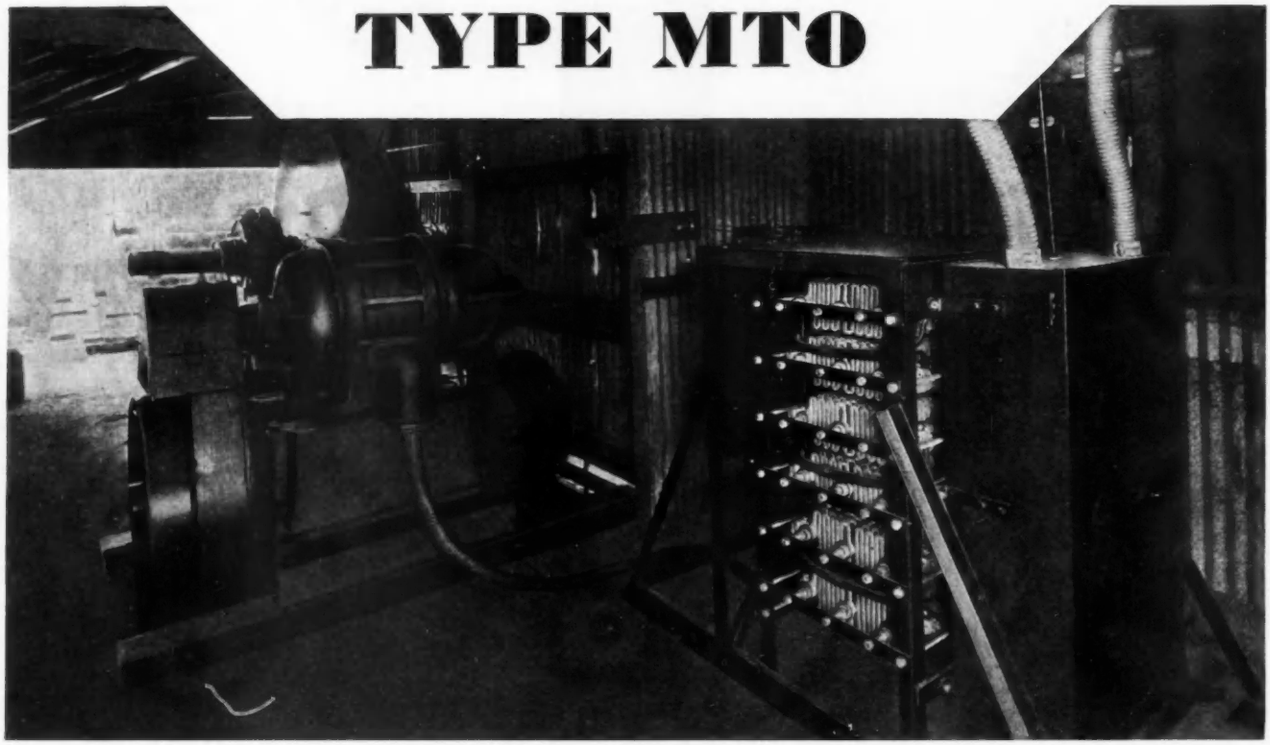
Pittsburgh Seamless
HIGH TENSILE CASING

3034

Here it is - - - in the field!

The One Motor For Every Power Need of a Producing Well - - -

TYPE MTO



G-E Type MTO, two-speed, 75/35-hp., oil-well motor and G-E control equipment in operation, Smackover, Arkansas

OUT in the famous Smackover Field of Arkansas, operators are turning their toughest drives over to the General Electric, Type MTO, two-speed, oil-well motor. Operators in this important field — as in many others — have found only this type of motor with its two adjustable speeds to be suitable for every power operation at a producing well.

Inherent features of design of the Type MTO motor eliminate unnecessarily heavy-starting current and mechanical shock. On the low speed for pumping, this motor gives the right number of strokes for each well with any type of rig and without change in gears or pulleys. On the high speed for pulling, its high-starting-torque characteristic (425 per cent, or more, of full load torque) is backed by an unusually high thermal capacity, permitting overload performance far in excess of that available with other types of drives, or even other types of motors. Beyond question, Type MTO is the most flexible drive you can use at your producing well.

Type MTO motors with unit control are available through G-E warehouses located near your operations. A nearby G-E office will be glad to provide complete information.

200-466

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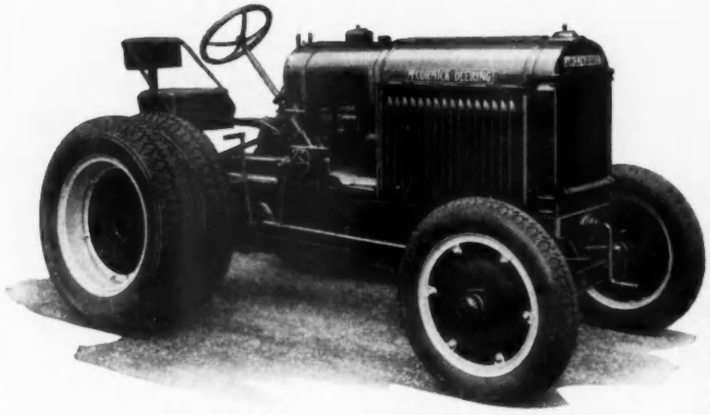
Reliable Power *for* Every Need

FEW mechanical devices are qualified to act in so many roles as the McCormick-Deering Industrial Tractor is called on to play. It is subject to an amazing variety of installation, combining with endless types of equipment. General industry has set it to work by the tens of thousands, at a thousand ingenious jobs. It is pulling, pushing, hauling, and hoisting; delivering flexible power in the factory and the mill, in the warehouse and the mine, in the oil field and the railroad yard, in the forest and on the public road. You will find it wherever compact mobile power is an asset. It is ready to go to work *anywhere*.



Available in two sizes: Models 20 and 30

* BRIEF FACTS *

McCormick-Deering Industrial Tractors are powered by vertical, 4-cylinder, valve-in-head, heavy-duty engines. These powerful engines are simple and rugged in construction, readily accessible, and have all the working parts thoroughly protected against dust and dirt. The crankshaft is mounted on light-running ball bearings. The engine is carried in a strong, one-piece main frame, which provides a stiff, non-twisting, non-weaving foundation for the entire tractor. . . . Regular equipment includes comfortable spring seat, throttle governor, oil air cleaner, oil filter, high tension magneto with impulse starter, hand and foot brakes, drawbar plate for automatic hook, muffler, heavy front axle, foot accelerator.

Right: Cleaning a well of the Wolverine Petroleum Co., Avant, Okla., with a McCormick - Deering. *Below:* McCormick - Deering-powered outfit working for the Kelly-Dempsey Co., in the Mid-Continent field

You will find a ready solution **to power problems in McCormick-Deering Industrial Power. Whether the need be for mobile or stationary power, working as independent units or as the power heart of special equipment. McCormick-Deering Power completely fills the bill. When you consider the low investment involved and the all-around economy and versatility it offers, you will appreciate why it is the standard power in every field.**

One hundred and twenty manufacturers **are building machinery powered by McCormick-Deering—abundant evidence of its true value, and assurance that you can get just the outfit you need. Expert service to keep your investment on the job is readily obtainable through 117 International Harvester branches in the United States and Canada, and through distributors and dealers everywhere. Write us for information.**

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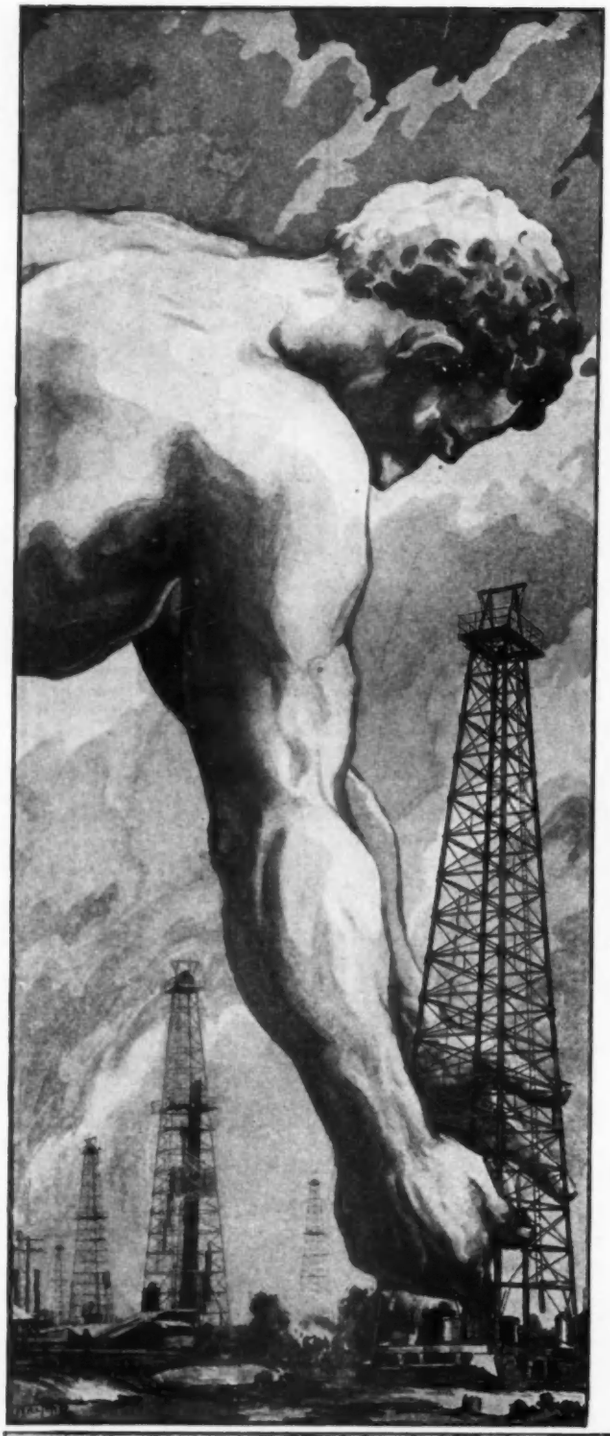
OF AMERICA
606 So. Michigan Ave. ***(Incorporated)*** **Chicago, Illinois**

McCORMICK-DEERING INDUSTRIAL POWER



STRENGTH
in Better Fabrication

STRUCTURAL STEEL—the Modern Giant of Strength is one factor that instils confidence in Parkersburg Derricks... Quality, too, of materials and workmanship. In addition, Parkersburg brings to Derrick construction the achievements of modern engineering—simple design and accurate fabrication—which produce strength, security, speed and ease of erection, and that ultimate economy which is distinctive to Parkersburg Derricks.

The same painstaking care given Parkersburg Derricks applies also to Tanks and other items of Parkersburg Equipment. Walking Beams, Pitmans, "A" Frame Jack and Sampson Posts, and Steel Wheels . . . every part of the complete rig has proved its strength, its perfect performance and its long-lasting service in oil fields the world over for more than a third of a century.

Get in touch with our nearest Representative for more facts or write Parkersburg, today, for complete data on "Better Fabricated" Derricks and Steel Equipment.

There is a

PARKERSBURG DERRICK

for every well

This Seal of Quality and Service on Parkersburg Equipment is Your Guarantee.

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THE PARKERSBURG RIG AND REEL CO.

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BRANCHES IN ACTIVE FIELDS

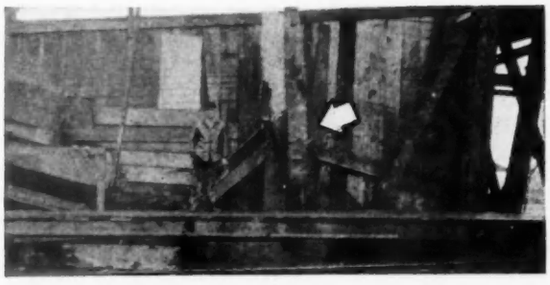
CABLE ADDRESS "PARIGREEL"

At the Greenwich, Kansas **Proving Ground**

JONES *high manganese* FULLY NORMALIZED SUCKER RODS

dominate the field

In this region, where hundreds of barrels of water must be pumped daily to get a profitable oil production, sucker rods are naturally subjected to the most gruelling strain of day and night operation. Here it is that Jones H. M. Fully Normalized Sucker Rods excel! Their wonderful performance record has resulted in their exclusive use on most of the wells in this difficult district. Here is a typical Jones service record in this district. The well was 2900 feet deep, from which was pumped 150 barrels of oil and 700 barrels of water daily. A string of ⅞-inch Jones High Manganese Fully Normalized Sucker Rods lifted this load continuously for 360 days at an average of 25 revolutions per minute, then ran 36 more days at 16 r.p.m., or a total of 13,789,000 lifts! The estimated weight of fluid lifted has been 75,000,000 pounds. Through it all there has been but 4 failures. This kind of Jones Sucker Rod service speaks for itself.



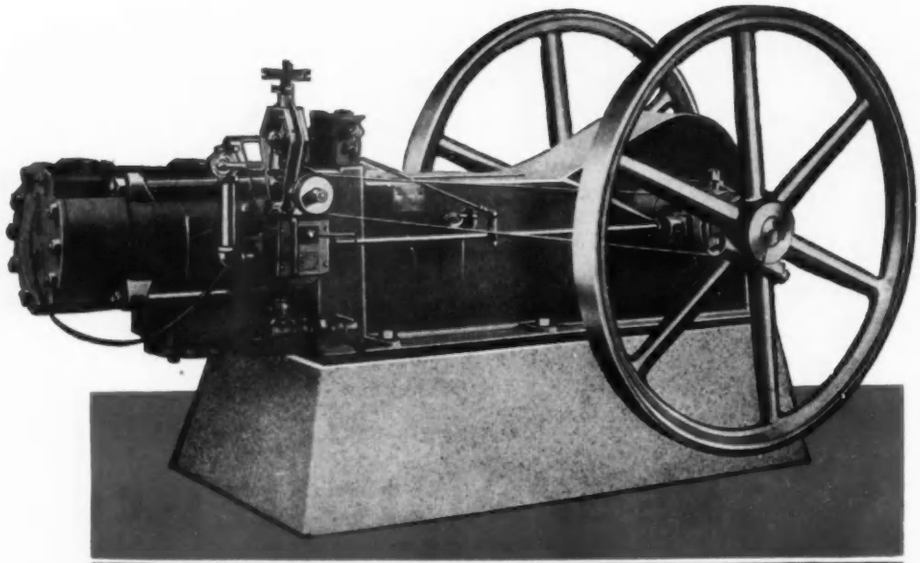
THE S. M. JONES CO.
TOLEDO, OHIO

Mid-Continent Office: McBirney Building, Tulsa, Okla.
Export Distributors: The Parkersburg Rig & Reel Co.,
25 Broadway, Room 736, New York, N. Y.

From Gas To Oil In 90 minutes

A threatened gas shortage is a serious condition at any time—in these days it is almost tragic—with lifting costs what they are—and the thoughts of having to further boost lifting costs by the installation of a prime mover other than an internal combustion engine is adding to a serious condition in many fields. Perhaps that is why producers have turned with enthusiasm to the Franklin Valveless O. G. Gas Pumping Engine which may be changed to oil fuel in less than 90 minutes and at a nominal cost.

Here's a fine pumping engine—equipped with every necessary refinement. And it's built with an eye to taking care of you in case of gas shortage or failure. Using oil fuel its operating cost is invariably low—its operating efficiency unusually high. It is the one tried-and-true Pumping Engine to install under above conditions.



FRANKLIN VALVELESS O.G. PUMPING ENGINE

FRANKLIN VALVELESS ENGINE COMPANY
FRANKLIN, PENNSYLVANIA

DISTRIBUTED BY OIL WELL SUPPLY COMPANY

THE OIL WEEKLY

MAY 15, 1931
Vol. 61, No. 9

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Editor

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HOUSTON, TEXAS

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THE OIL WEEKLY

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Demand Permits Allowable Increase in Texas

FORT WORTH, Texas.—More generous production allowances given at the start of the May proration period to old oil areas in the Panhandle, North and Central West Texas were almost imperative for small operators to hang on during the prevailing low crude price period. Revised proration figures show a light increase in allowance for all wells in these districts, and the relief has largely been supplied by The Texas Company, Magnolia Petroleum Company, Stanolind Crude Oil Purchasing Company and Humble Oil & Refining Company. Easing up of production restrictions has caused producers in these districts to look upon proration with more favor, especially since comparatively few properties are without pipe line connections and market outlet in some form or another, and the group are lending moral support to the continuation of proration in the East Texas flush fields.

Proration enforcement by the Texas Railroad Commission is undergoing its first serious attack due to steps taken within the past week by East Texas producers and pipe line companies in petitioning both federal and district courts at Austin to deprive the commission of any authority in restricting production. If these plaintiffs are successful in stripping the commission of its power to prorate, such matters will then revert back to a voluntary basis as applied during the forepart of West Texas over-production period. Previous injunctions obtained against the commission's proration orders have been confined to the seeking of relief on certain properties in certain fields, and no attempt was then made to throttle the activities of the commission otherwise.

Efforts of leading proponents of proration in Texas to introduce and have the Legislature approve a bill, known as Howsley, or House Bill No. 1052, that will greatly strengthen the powers of the commission in carrying on its proration activities, brought on considerable agitation in oil and political circles of the state early this week. The East Texas Lease, Land, Royalty and Producers Association and the Independent Petroleum Association of Texas openly declared war on the measure. The two factions, antis and those favorable to the bill, extended considerable effort in gaining the support of the members of the House and Senate for their particular side of the issue.

The Texas Panhandle started the present month off with a production allowance of 39,981 barrels daily, as compared to only 36,990 barrels during April. The increase was made possible by Magnolia Petroleum Company increasing its nomi-

Proration Data on Texas-New Mexico Fields As of May 1, 1931

	No. Wells	Official Daily Pot'l Production	Maximum Daily Prod. Allowance	Percentage of Pot'l Prod. Allowed	Daily Average Yield Per Well
Texas Panhandle—					
Gray County	758	98,182	27,131	27.63	35.79
Hutchinson County	917	27,251	8,318	30.52	9.07
Carson County	242	12,126	3,269	26.96	13.51
Moore County	23	3,291	1,052	31.97	45.74
Wheeler County	43	677	209	30.87	4.86
Potter County	1	7	2	28.57	2.00
Total	1,984	141,534	39,981	28.25	20.15
West Texas—					
Yates	401	5,507,536	70,000	1.27	174.56
Crane-Upton	597	50,640	18,373	36.28	30.78
Howard-Glasscock Dist.—					
3000-foot wells	93	14,376	6,494	45.17	69.83
2500-foot wells	53	10,465	4,333	41.40	81.75
2200-foot wells	85	40,456	15,706	38.82	184.78
1800-1300-foot wells	302	7,932	4,573	57.65	15.14
Total	533	73,229	31,106	42.48	58.36
Ector County	80	25,435	6,600	25.95	82.50
Winkler County	520	96,559	48,000	49.71	92.31
Total	2,131	5,753,399	174.079	3.03	81.69
North Texas District—					
New Castle District	156	12,759	5,742	45.00	36.81
N. Texas (Misc'l.)	15,004	80,044	51,352	64.15	3.42
Central East Texas—					
Van	*237	461,720	45,000	9.74	189.87
Longview	*44	100,408	34,993	34.85	795.29
Kilgore	*	.....	66,000	.....	....
Joiner	168	.....	65,000	....	386.90
Southwest Texas—					
Darst Creek	259	147,503	20,000	13.56	77.22
Salt Flat	**330	18,223	12,765	70.05	38.68
Pettus	19	6,102	4,500	73.74	236.84
New Mexico—					
Hobbs	143	1,148,920	37,040	3.22	259.02
Eunice	8	.....	400	....	50.00

*Potential through 11/16-inch choke on 2½-inch tubing only.
**Effective 3-14-31 to 9-14-31.

nations from 3000 to 6000 barrels daily, and Humble Oil & Refining Company boosting its nominations from 5000 to 6000 barrels. Since the release of this proration period Magnolia Petroleum Company announced that effective May 10 its takings would be gradually increased to about 10,500 barrels daily. The latter has more than 1,000,000 barrels of empty steel tankage in the Panhandle.

North Texas began faring better under proration beginning with the May period as result of several of the most important purchasers having agreed to step up their takings. According to figures released by Umpire L. V. Hull the New Castle field, Young County, will be allowed to produce 5742 barrels daily from 156 wells, or an average of 36.81 barrels daily. During April this field was curbed to a daily average of 24.58 barrels daily. Balance of North Texas is given a combined daily potential of 80,044 barrels from 15,004 producing wells, and will be allowed to produce 51,352 barrels daily, or an average of 3.42 barrels daily per well.

Increase Takings in Central West Texas

Increased crude nominations by The Texas Company, Humble Oil & Refining Company and others also was beneficial to well owners in Central West Texas. The Texas Company announced that all wells in Jack County would be allowed to produce 20 barrels daily, instead of a maximum of eight barrels daily as in the past. The latter is also giving a similar allowance to the owners of about 25 flowing and pumping wells in the Burkett field, Coleman County, which is at present the only important flush oil area in the district.

Proration in West Texas fields showed little change over the previous month, and no action has been taken by the commission on the petition filed recently by operators in the Yates field to increase their allowable production from 70,000 to 87,000 barrels daily. Revised production allowance for the Howard-Glasscock County district is 31,106 barrels daily, as compared to 30,844 barrels daily the previous month. Both Shell Petroleum Corporation and Cosden Oil Company attempted to increase their crude nominations in this district for May, but were turned down on the strength of reports made to the commission that the raise in production allowance granted during April caused the percentage of water accompanying the oil to increase about five per cent.

The fact that West Texas crudes are now posted at 22½, 30 and 35 cents per barrel flat price, according to the field in which located, is believed to be partially responsible for the demand being greater of some buyers, while a similar situation prevails in the Panhandle where the price is the lowest in its history. Hobbs field, New Mexico, advanced from 32,532 barrels to 37,040 barrels daily allowable on May 1 as result of increased nominations by Shell Petroleum Corporation, but this company announced its intentions of giving the field a larger outlet several weeks before the price cut was initiated by other buyers.

East Texas Well Average High

East Texas has an average daily well allowance far in excess of that enjoyed by any field, and even under such treatment has not come through with the proper co-operation that is noticeable in all other sections of the state, with few individuals excepted in the Panhandle. The Longview field started its first proration period off on May 1 with an average well allowance of 795.29 barrels daily. The Longview field was placed on a flat quota of 386.9 barrels daily per well, owing to the fact that Umpire E. A. Sessums did not have sufficient time to prepare tables on potential production of each 20-acre unit, but such data is supposed to be available for the May 16-31 period.

NEXT WEEK

Kettleman Hills is no longer a "gasoline field." Declining gravity of the oil—from 61 degrees and higher at first down to 37 degrees now—is bringing a readjustment of values placed on this area. Kettleman Hills which at first was looked upon as being capable of producing unlimited quantities of oil actually lighter than U. S. motor grade fuel is now being considered in the light of a normal California field of rather sizeable proportions. Some effects of this important change will be discussed in a special article next week.

Seeking Four Injunctions On East Texas Proration

Austin, Texas.—Four separate injunction suits seeking to restrain the Texas Railroad Commission from enforcing its proration rules in East Texas were filed in federal and district courts here late last week and early this week by independent companies, operators and pipe line companies. Three small leases in the Joiner field had previously been made immune from proration through an injunction obtained in district court here April 10 by Carl Estes and associates. Temporary abandonment of proration of East Texas fields is in danger should all the plaintiffs succeed in obtaining injunctions, as their producing properties are widely scattered among the three areas, and offset lease owners would be forced to open up wells for drainage protection.

Relief through the federal court was sought here May 11 by Alfred Macmillan, Tyler, vice president Macmillan Petroleum Corporation of California, which has producing properties in Gregg and Rusk Counties, against the Texas Railroad Commission and Umpire A. B. Capers in connection with East Texas proration. Judge Duval West Tuesday set preliminary hearing at San Antonio May 13. The petition stated that the commission's proration order is illegal, and alleges that the latter is without authority to issue proration orders, while a number of other allegations were set forth, including the rights of the state to impair obligations of contracts as set forth in Article 1, Section 10, United States Constitution. The suit was filed in the name of Alfred Macmillan, acting as trustee for the above corporation. The petition stated that the company has a daily potential of 54,000 barrels from its wells, but is only allowed to produce 1455 barrels daily under proration. It further stated that contracts had been made prior to the proration order for the sale of the following amounts of crude: 200,000 barrels of crude to Toronto Pipe Line Company (British-American Oil Producing Company of Tulsa and Toronto, Canada), to be delivered in 60 days; 600 cars of crude to be delivered within 90 days to Jas. B. Berry & Sons; 1500 to 2000 barrels daily on open account to Sinclair Refining Company; and 50,000 barrels within 60 days to Standard Oil Company of Indiana (Stanolind Crude Oil Purchasing Company.)

Nat Hunter Producing Company and Nat Hunter Oil Company, Houston, filed petition for proration injunction in district court here May 11 through Ex-Governor Dan Moody, attorney. The three umpires in East Texas were made defendants along with the commission. No action was taken by the court. The former concern recently obtained permit to operate in Texas with a Delaware charter, naming N. N. Oille, Houston, as state agent, and has producing properties in the Kilgore field.

(Continued on page 46)

Bottom-Hole Pressures in Oil Wells*

By C. V. MILLIKAN[1] and CARROLL V. SIDWELL[2]

THERE is nothing more important in petroleum engineering than a definite knowledge of pressure at the bottom of an oil well at any existing operating condition, and the relation of this pressure to the pressure within the producing formation. A knowledge of bottom hole pressure is fundamental in determining the most efficient method of recovery and the most efficient lifting procedure, yet there is less information about these pressures than about any other part of the general problem of producing oil.

BOTTOM - HOLE pressure may be calculated or determined by several methods. On inactive well it may be calculated from the fluid head or, if the well is shut in, by adding the casinghead pressure, the static head of the gas, and the fluid head. In wells flowing naturally through tubing the pressure at the bottom of the tubing may be calculated by adding the pressure at the casinghead between the tubing and the casing and the pressure due to the weight of the column of gas, but there is always possibility of error caused by fluid being in the annular space above the bottom of the tubing. If a well with tubing is flowing through either the annular space or the tubing, sufficient gas may be injected through the static space to insure that it is free of fluid but not sufficient to establish an appreciable friction loss. The pressure at the bottom of the tubing can then be calculated by adding to the pressure at the tubing head, the pressure due to the weight of the column of gas. This is probably the most accurate method of calculating bottom-hole pressures. In wells flowing by gas lift, the pressure at the point the gas enters the flow may be calculated by a gas flow formula.

Several Types Used

Several types of pressure bombs have been used to measure the pressure at the bottom of wells. One is a piece of steel tubing with a check valve in the bottom and a connection for a pressure gauge at the top. It is lowered into the well to the point at which the pressure is desired, then brought to the surface and the pressure read from a pressure gauge put on the top connection. Several bombs have been made which enclose a maximum reading pressure gauge. Some use a maximum indicating pointer, but this is not as satisfactory as a stylus on the pointer scratching a smoked surface. Consideration has been given to electrical instruments which, on being lowered into a well, give a continuous reading at the surface, but so far as is known, this method has not yet been developed to practical use. A recording gauge built up with a common gauge pressure element, recording on a small circular clock-driven chart, has been used some, but its use is limited because of its large diameter and difficulty of close reading. Another recording gauge is being developed by which the pressure is determined with a piston and spring, on the same principle as a steam indicator gauge, and another obtains the pressure from a fluid-filled tube with elastic walls.

The Amerada Gauge

The Amerada pressure gauge was used in determining the bottom hole pressures considered in this paper. It was developed in the laboratory of Geophysical Research Corporation under the direction of Dr. F. M. Kannenstine. A cross-sectional drawing of the instrument is shown in Figure 1. The gauge consists of three main parts: clock, chart-carrier and pressure element. The clock is of special design, having a diameter of 1⅜ inches and an over-all length of seven inches. The carrier holds a chart seven inches long and 2⅞ inches wide. The movement of the chart is obtained by a central screw operated by the clock. This screw drives the chart carrier downward so that its weight almost balances the friction thus reducing the power demand on the clock. The pressure element consists of pressure element tubing, fabricated into a spiral coil ⅞-inch in diameter and seven inches long. The lower end of this tube is soldered to an opening in the base, which extends to the outside of the bomb. The upper end is sealed and attached to a shaft to which is also attached an arm and brass stylus for recording on a metallic faced paper chart. The entire instrument is built on a frame which fits into a steel case, and as it is run into the well is 41 inches long, two inches outside diameter, and weighs 25 pounds. It is usually run on a steel wire measuring line.

Five Speed Clocks Used

Five different speed clocks have been made which will run the full length of a chart in one, three, 12, 24, and 48 hours. Pressure elements of various ranges may be used. The lowest range used thus far has a calibration of 75 pounds, and the highest has a calibration of 1000 pounds per inch of movement of the stylus. Temperature correction in most cases may be neglected. The chart reading

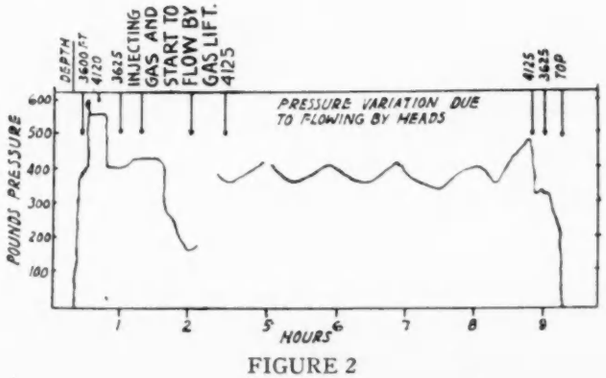


FIGURE 2

*Prepared for presentation before the Petroleum Division of the American Institute of Mining and Metallurgical Engineers. Published by permission of Amerada Petroleum Corporation.

[1] Chief production engineer, Amerada Petroleum Corporation, Tulsa, Oklahoma.

[2] Production engineer, Amerada Petroleum Corporation, Seminole, Oklahoma.

will be approximately one pound low for each 65° F. increase in temperature. Although this instrument appears to be quite delicate, service in the field has proven it very rugged.

Five charts taken in producing wells are reproduced in Figures 2 to 6 inclusive. The pressure scale and notes showing depths of readings and some of the changes in the well which caused a change in pressure have been added. The chart shown in Figure 2 was made in a well producing by gas-lift, flowing between 2½-inch tubing and seven-inch casing. The bottom of the tubing was 3602 feet and the top of the sand at 4124 feet. Readings were taken near these depths before gas was injected to start the well flowing. The pressure of 558 pounds recorded at 4120 feet was considered as the pressure in the producing formation. The pressure at the bottom of the tubing increased 26 pounds after starting to inject gas probably due to the weight of the gas under pressure. During the last five hours of the chart the well was flowing by heads at the rate of 1560 barrels per day, with an input volume of 940,000,000 cubic feet and a trap volume of 1,600,000,000 cubic feet per day. The chart shown in Figure 3 was taken in a well flowing by heads at the rate of 580 barrels of oil per day, from 3935 feet through 8⅝-inch casing. The formation pressure at the top of the pay zone was 1520 pounds. The rate of gas production which is plotted simultaneously with the pressure at the bottom of the hole was obtained with an orifice meter, using a fast meter chart.

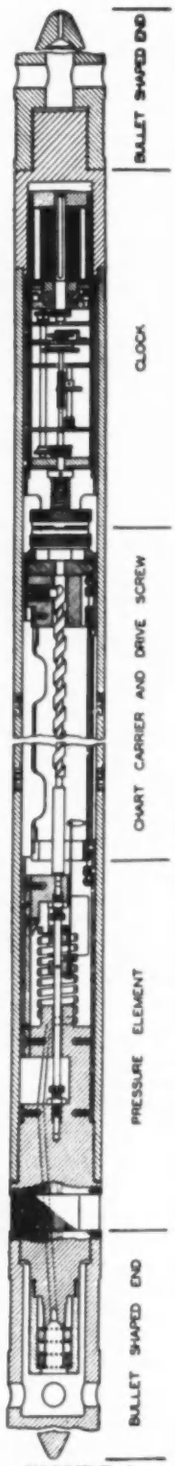


FIGURE 1
Amerada Pressure Gauge. (Cross Section)

Factors Repeated

The time, pressures, and gas volume were repeated with marked regularity during each flow. The chart reproduced in Figure 4 was taken in a well that had been flowing by gas lift, but was shut down at the time the chart was taken and still had a tubing head pressure of 224 pounds. The increase in pressure due to the weight of the column of gas is recorded down to 3750 feet where the pressure was 257 pounds. From the pressure increase in fluid between 4000 feet and 4070 feet and the pressure increase from the top to 3750 feet in gas, the point at which the gauge went into fluid is calculated at 3830 feet. When the tubing pressure was released the pressure at the bottom temporarily dropped only 15 pounds, showing that the tubing filled with fluid almost as fast as the gas pressure in the tubing could be released. The chart shown in Figure 5 was taken in a well producing at the rate of 2200 barrels of oil and 2,500,000,000 cubic feet of gas per day through 8⅝-inch casing. The chart shows pressure at intervals of 250 feet in the flowing column of oil and gas. The excessive vibration of the gauge while at 3925 feet was probably caused by the gauge hanging opposite a stratum of pay sand. The chart reproduced in Figure 6 was taken in a pumping well and is explained in a later paragraph. These charts are representative of a large number that have been obtained in wells producing under a wide variety of conditions.

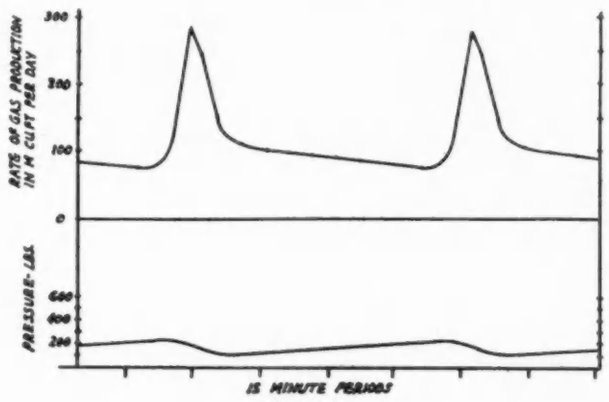


FIGURE 3

Application of Bottom-Hole Pressures

The value of determining pressures in different formations while drilling through them is shown in the following table. These pressures were obtained in wells in the Carr City pool in the Seminole district, Seminole County, Oklahoma:

Formation	Top ft.	Bottom ft.	Pressure
Hunton	3980	3910	1520
Simpson	4068	4124	1152
First Wilcox	4124	4142	637[3]
Second Wilcox	4217		800[4]

[3]Simpson and First Wilcox open to hole.
[4]Estimated from increase in fluid level.

Measured pressures in these formations permit certain precautions which might otherwise be overlooked. For example, in drilling it is the universal practice in the Seminole district to produce the small amount of oil which may occur in the Simpson with the "first Wilcox" sand. As these sands are usually drilled with cable tools, the much higher pressure in the Simpson would cause oil to flow from the hole into the "Wilcox" sand when the porous part of the "Wilcox" is first encountered and if the hole were not free from drill cuttings they might be packed so tight around the bit that a fishing job would result. It is

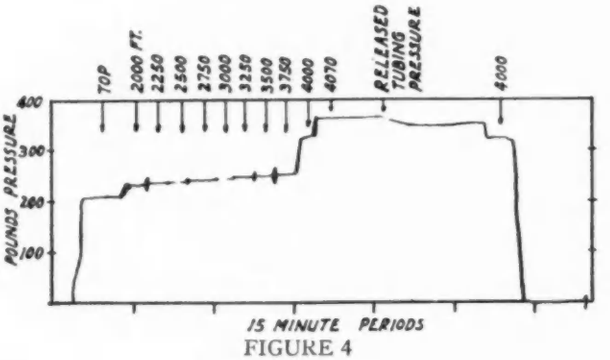


FIGURE 4

not uncommon to find a large difference in the original pressures in formations that are separated by a relatively short vertical distance.

The formation pressures and the production of four wells for ten months are shown graphically in Figure 7. These

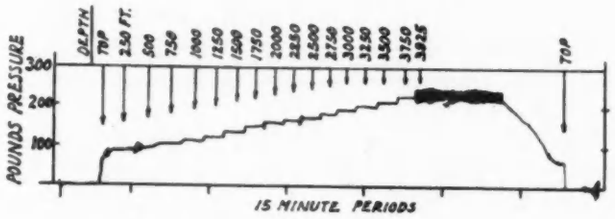


FIGURE 5

wells are located in South Earlsboro pool, Sections 22 and 23, T. 9N., R. 6E., in Seminole County, Oklahoma. The pool is known to have encroaching edge-water forming a natural water flood, the static head of which is the same as the original pressure in the field. Under such conditions it is reasonable to expect the water to have considerable effect on the rate of decline of production and on the formation pressure in the area adjacent to any individual well. If the oil and gas are removed from the reservoir faster than the water encroaches, the formation pressure, and therefore the rate of recovery, will decline as in the first part of the curves for Edwards 2 and Grounds 2. When the production of oil and gas decreases to such a rate that water replaces it at the same rate as it is removed, both the formation pressure and the rate of recovery should be constant, as in Edwards 2 after July, after September in Grounds 5, and throughout Edwards 5. When the flood approaches the well, there will be an increase in the formation pressure and also the rate of production, as in Edwards 2 and Edwards 5 in January. When the water reaches the well, the rate of recovery will decrease and the pressure will remain constant or may increase as in Grounds 2 after November and Grounds 5 after July. While correlation of the oil production, formation pressures, and water encroachment in these wells is obvious, it is probable that if the bottom-hole pressure were available during each of the production tests, a correlation between the pressure differential in the formation and the rate of production would permit a broader and more definite interpretation.

Relationship of Production and Pressure

Pierce and Rawlins[5] have determined a mathematical relationship of rate of production and differential pressure within the producing formation for gas wells. A similar correlation has been found in certain oil wells in the Yates field and in the Seminole district. Moore has given other relations of the rate of production and pressure differentials in the sand.[6] Data on two wells in the Seminole district worked out according to the method of Pierce and Rawlins, are given in Figures 8 and 9. The data in Figure 8 were taken in a well producing from the Wilcox sand where the formation pressure was 412 pounds, and in Figure 9 in a well producing from the Hunton lime in which the formation pressure was 1520 pounds. Pierce and Rawlins also found that when this rate of production was expressed by a curve that the slope of the curve did not change with depletion. While sufficient data have not been obtained to determine what the effect of depletion may have on the correlation in oil wells, it is believed that it may not be so simple as in gas wells. In gas wells the same fluid is moving through the sand at all stages of depletion while in oil wells the characteristics of the fluid change as the production is depleted, principally due to a change in the absolute gas-oil ratio. Other differences of lesser importance such as change in gravity of oil, and gravity of gas, including that due to some of the lower hydrocarbons which were originally in liquid state becoming gas, and change of size of drainage channels due to erosion within the producing formation may affect the correlation after some depletion has occurred. Even though the slope is changed, a correlation should still exist which can be expressed mathematic-

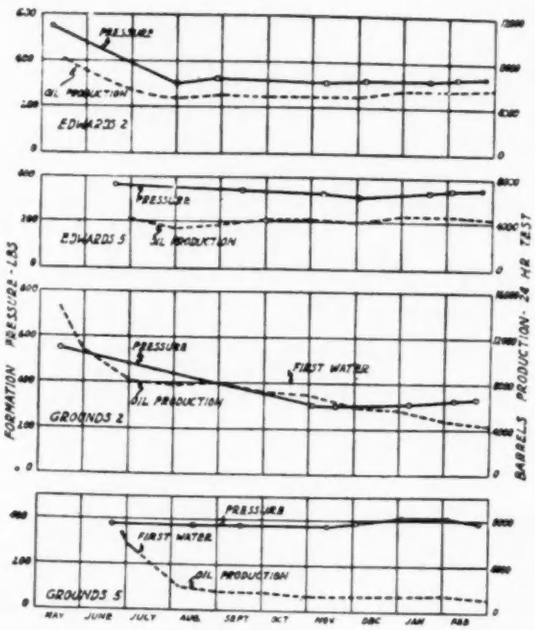


FIGURE 7

Curves showing relationship of formation pressure to the rate of oil production. (24-hour potential test)

ally, but it will require more tests to determine than if the slope should remain constant. The application of this relationship in prorated fields should be especially important. Potential production might be established without opening any well to its open flow capacity. This would save gas, extra labor, and lessen the danger of bringing in bottom water. It deserves much attention in this connection.

What Tests Show

The relation of rate of production, casinghead pressure, and bottom-hole pressure obtained from a series of tests at various rates of production are shown by curves in Figure 11. These tests were taken from a well producing from the Hunton lime in the Carr City pool, Seminole County, Oklahoma. They were made over a period of about two

[5]Pierce, H. R., and Rawlins, E. L., "The Study of a Fundamental Basic for Controlling and Gauging Natural Gas Wells," Part 2, U. S. Bureau of Mines, Reports of Investigations, Serial 2930, May, 1929.

[6]Moore, T. V., "Determination of Potential Production of Wells Without Open Flow Tests", Subtopic of "Improvement in Production Practice", by W. W. Scott, American Petroleum Institute, Eleventh Annual Meeting Proceedings, Section IV, p. 27.

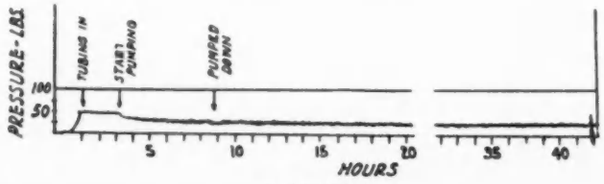


FIGURE 6

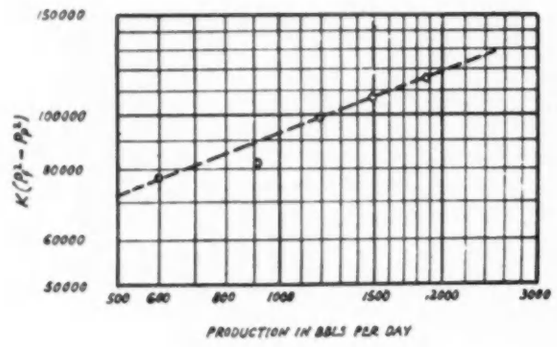


FIGURE 8

Curve showing the relationship between formation pressure (P_t) minus bottom hole pressure (P_b), and rate of oil production

weeks, and were taken at random, rather than in the sequence of the plotted points. The pressure in the producing formation did not change any measurable amount during this period. Subsequent tests have not given the uniform relationship of casinghead pressure with bottom-hole pressures and rate of production that was obtained in this series. Similar data on a number of wells have shown that the correlation between the casinghead pressure and bottom-hole pressure is often indefinite and becomes more irregular as the bottom-hole pressure approaches the pressure in the producing formation.

Pressure gradients have been taken in wells flowing naturally and by gas-lift. Some typical gradients are shown in Figure 10. Additional well data, at the time these pressures were taken, are given in the following table:

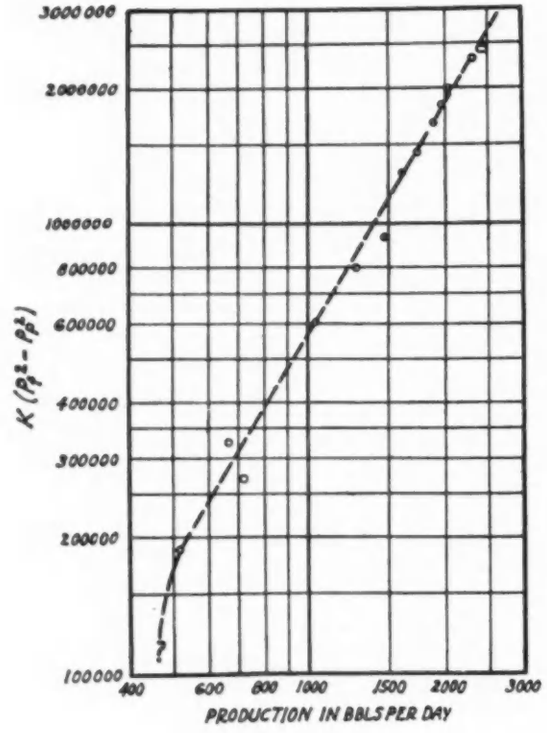


FIGURE 9

Curve showing the relationship between formation pressure (P_t) minus bottom hole pressure (P_b), and rate of oil production

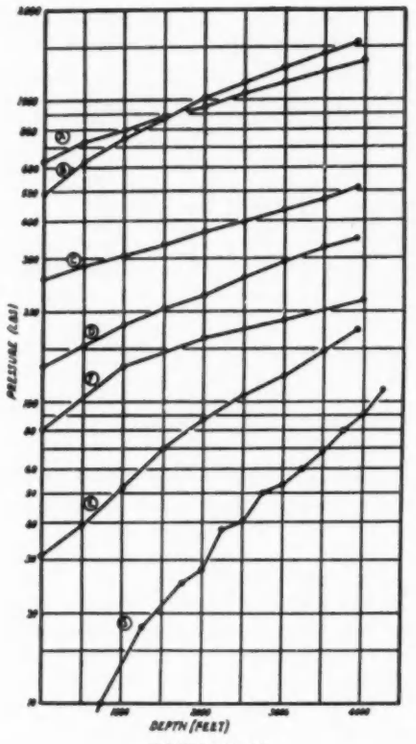


FIGURE 10

Pressures at various depths in flowing wells

Curve	Size of flow string inches	Absolute gas-oil ratio at top of well cubic feet per barrel	Velocity at top of flow string feet per second
A	8⅝"	28	1.2
B	8⅝"	36	0.4
C	8⅝"	68	56.5
D	8⅝"	104	81.6
E	8⅝"	669	35.3
F	7 "	1065	141.5
G	5-3/16"	1420	94.4

Curves A. B. C. D, and E are on the same well under different pressure conditions. The curves are plotted on semi-logarithmic paper and most of the points approach a straight line in the lower part of the flow string, but to-

(*Continued on page* 54)

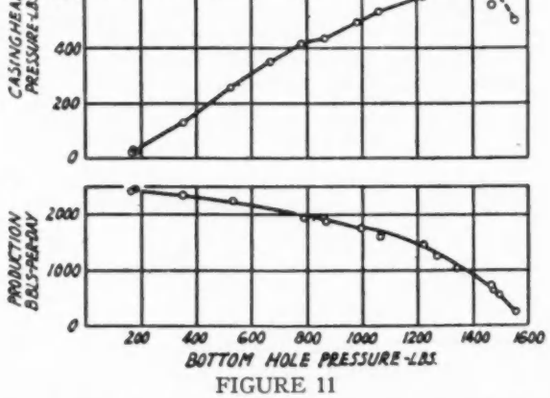


FIGURE 11

Correlation of bottom hole pressure, rate of production, and casinghead pressure

East Texas Field Being Rapidly Defined

By JACK LOGAN
Staff Representative

FIELD developments of the past two weeks have contributed much toward further outlining the new East Texas pool, which now spreads over considerable portions of four counties, with possibility of reaching into a fifth, and which is now established as the most extensive single field ever discovered in the United States.

From the most northerly producing well of the Longview-Gladewater district, Gregg-Upshur Counties, to the most southerly producer in the Joiner or Henderson-Arp area, Rusk-Smith Counties, is a distance of 33 miles, representing the present north-south extent of the field. From east to west the field varies in extent, the distance between the most easterly and most westerly producing wells in the Joiner area being over six miles; in the Kilgore district about 3½ miles; and in the Longview-Gladewater area more than six miles.

Based upon well data available at that time, the approximate outline of productive territory appeared at the end of the past week as indicated on the accompanying map, allowance being made along the western, southern and northern edges of the field for probable presence of salt water in the regular producing sand where it is to be expected at depths of 3300 to 3350 feet below sea level, as indicated in Kilgore district wells which have developed water trouble.

As shown on the map the proven area represents approximately 90,000 acres of productive territory. The immensity of this productive area may be fully realized only by comparison with the acreage of other fields which have been considered as exceptionally large, but which are dwarfed when considered along with the new East Texas field. There are, for example, 15,000 productive acres in the Yates pool, Pecos County, West Texas; 10,000 acres each in the Oklahoma City field and the Hendrick pool, Winkler County, West Texas; 16,000 acres at Kettleman Hills, California, exclusive of the "South Dome," which is believed part of a separate structure; 4000 acres in the Van field, Van Zandt County, Texas. These five fields combined have total productive area of only about 60 per cent as much as the East Texas field alone.

Furthermore, despite the many wells which have been drilled, the limits of the East Texas area are still not definitely established, and it is possible that considerable acreage may yet be proven productive, particularly on the north end, which is left open on the accompanying map for possible extension in that direction. There are no dry holes or salt water wells beyond the present northern limit to warrant such closure; and although the field has narrowed to a relatively small width between Mrs. Mamie Hammond et al's J. M. Hamby 1, a dry hole on the east, and Tips DeArmand-Caps et al's Charles Cobb 1, a salt water well on the west, the intervening territory has been demonstrated to be productive by Eslick et al's Nicholson 1; and there are numerous operators who anticipate continuation of the field to the north, with possibly another productive "nose" swinging around the DeArmand-Cobb well and thence northwesterly, like the westward pointing "noses," in the Joiner, Kilgore and Longview-Gladewater districts, while the eastern boundary of the possible north extension is pictured as continuing the rather uniform established northeasterly trend.

May Extend Southward

Similarly, there is some possibility that the productive territory may extend southward in the Joiner area beyond the limit sketched in on the accompanying map, to include additional land in Smith and Rusk Counties and possibly a small portion of northeastern Cherokee County, which adjoins Smith County on the south and Rusk County on the east. Available information points more strongly, however, to closure of this southern end roughly as shown on the map. For Sinclair Oil & Gas Company's A. S. Jarvis 1, Juan Vargus Survey, Smith County, is apparently a west edge well, having topped the 10-foot sand section from which it is producing at 3310 feet below sea level. The same company's Amanda Wiley 1, James Jordan Survey, east of Arp, had logged sand from 3314 to 3326 feet sub-sea and had come in flowing a little oil but mostly salt water. Southeasterly from Sinclair Oil & Gas Company's Jarvis 1 the same company's Kinney 1 also proved relatively low on the structure, encountering the top of the nine-foot sand section from which it is producing at 3290 feet sub-sea, indicating that the edge of the field is likely to swing sharply to the southeast in that immediate area.

LaSalle & Davenport's Kinney 1, almost due east of the Sinclair-Kinney producer, has not been completed, but casing has been cemented after coring of two feet of oil sand topped at 3209 feet below sea-level. Seven miles south and slightly east of Sinclair Oil & Gas Company's Kinney 1 was located the recently abandoned dry hole of Ramsey Petroleum Company on the Kangerga land, Pettus Survey,

(*Continued on page* 65)

Well Data and Map Defining Probable Producing Limits in Gregg-Upshur and Smith-Rusk Counties in East Texas will be found on pages 66-67.

Proper Methods of Completing Gas Wells

By ROSS M. STUNTZ
Cities Service Gas Company, Bartlesville, Oklahoma

IT is difficult to discuss gas production without discussing gas drilling. Any paper on gas production must start out with the assumption that the wells from which this gas is going to be produced have been drilled properly. The drilling of gas wells is often very successfully handled by a different organization than the one who handles the production of gas from the well. This is only possible either where both organizations are expert in the line of work or where one of them is expert and there exists a thorough co-operation between the two. As a rule the organization drilling a gas well is done with it when it is completed, while the gas production man starts there and must live with the well during its entire producing life to its abandonment.

This paper was presented before the Natural Gas Division of the American Gas Association, Memphis, Tennessee, May 11, 14, 1931.

SPEAKING generally, in the Mid-Continent area, if a gas sand is not worth a well for that particular sand, no other wells, after the first test, ought to be drilled. It is generally better, at least after the first test well, to drill down to the shallow sand and produce it to exhaustion, then carry the well down to the next sand and so on until all the sands have been exhausted. In some cases it is desirable to save gas in a bradenhead for fuel purposes or for securing such revenue as it may be possible to secure from bradenhead gas production in a shallow sand.

In case it is desired to bradenhead gas in any sand it is desirable to set one string of casing on top of the sand and set the next string of casing just below the gas sand. In this way the gas in the shallow sand must come up between the two strings of casing and be taken out of the bradenhead on top of the hole. The chief objection to producing gas in this manner is that due to the very small space between two such strings of pipe no bleeder lines are possible and no remedial work on the bradenhead gas producing horizon is possible. Therefore, in bradenheading gas one usually spends an additional string of pipe and lives in hope of getting gas enough from such sands to make the additional investment profitable. Sometimes it is highly desirable to follow such a method in order to secure fuel for other drilling operations, and thus save the purchase of fuel. It is my experience that most pipe line companies put very little value on bradenheaded gas and often refuse to spend the money necessary to connect same to their pipe lines.

After the shallow sand has been cased in the manner mentioned it is possible to carry the hole further. When producing from a deeper sand, in general the practice is to set the second string of pipe on top of the second gas sand. This often leaves a great deal of open hole between the first string of pipe on top of the shallow gas sand and the second string of pipe on top of the deep gas sand. If any caves or water bearing formations are in this space between the two casing seats the gas bradenheaded is quite sure to be of very short life and the shallow sand in that field is often flooded.

I have known of very few cases where gas from more than one sand was successfully produced in the same well at the same time. Sometimes it is desirable to carefully mud off the shallow sands and produce them after the deep sand has been exhausted.

As large amounts as 50 barrels a day of oil have been successfully separated from natural gas in drips located in the lines between the producing well and the main gathering line for natural gas. In connecting up any gas well one or more drips should be installed before the gas enters the main field line. These serve to catch small amounts of fresh water, salt water, or gasoline, and most gas wells produce some one or more of these fluids. Unless a well is showing considerable amounts of fluid when it is connected it is our company's practice to start out with the installation of such drips, usually with one drip on the inlet of the meter for the particular well in question.

If a well is producing considerable oil to begin with when drilled in, the amount that it will produce when a considerable back pressure is held on the well, such as would be necessary to make it feed into the pipe line, generally holds back a large part of the fluid and much less oil is produced with the gas than one would expect had he seen the well when it was drilled in. You will probably be surprised at the small amount of fluid that will be produced, under these conditions. If the well produces more fluid than this drip will handle efficiently it is our practice to recommend that the producer install a separator of suitable size and design to meet the conditions of the particular case in question. In fields where fluid is expected to increase, these connections are put in on the down stream side of the cutting device or flow bean before the gas enters into the drip on the inlet side of the meter. These connections at the time of installation consist of a meter flange, on each side of which a threaded nipple is welded into the pipe and then closed with flange unions or with collars and bull plugs. After the separator has been installed a blind disc is put in the meter flange and the gas goes from the down stream side of the flow bean into the separator and returns from the separator on the down stream side of the blinded meter flange. This still leaves the drip originally installed on the inlet of the meter as an additional place to catch fluid that might be pulled through the trap, or as a place to determine whether or not the trap or separator is taking out all the fluid in the gas.

In the case of any high-pressure wells producing both oil and gas a separator and sometimes several separators, connected in series, are set up, through which the gas passes before it goes to the meter. In such cases the flow beans, or other pressure control devices, are located directly on the well's Christmas tree for the protection of the separators, and to allow separators of

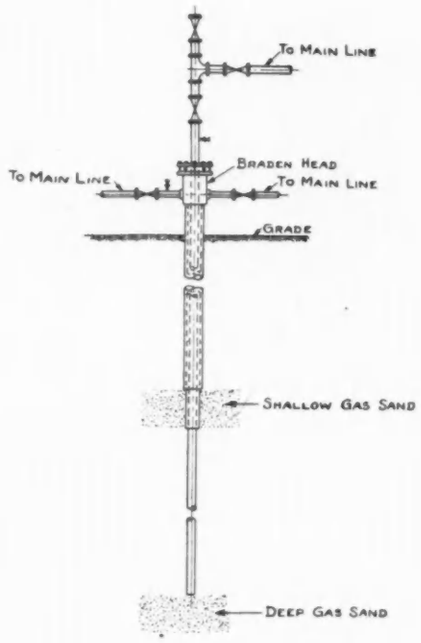


FIGURE 1
Producing bradenhead gas

a safe working pressure equal to the pressure carried on the pipe line to be used.

If a well producing both oil and gas is at first producing very much oil, or believed likely to produce very much oil, a separator of satisfactory size, test, and design better be installed right at the start. This is often greatly in the interest of the producer for two reasons: 1. He is sure to get all of the oil out of the gas; 2, he is sure to deliver dry gas to the purchasing pipe line company.

There are several well-known kinds of separators available in every field that have been adequately proven to do this kind of work.

Salting of Wells

I have not had experience with many wells being troubled from salt while they were large wells or while they had high pressures. I have known a few cases where bleeder lines in which a perforated joint, or part of a joint, was placed on the bottom of the hole salted up. Such salting can be deferred for a considerable time by cutting slots with a cutting torch for perforations instead of drilling of small holes.

In some fields when wells have declined considerably in pressure and volume both tubing and bleeder line salt up badly. Small amounts of fresh water put in such wells by a lubricator, after having been allowed to stand shut in for a few hours, are usually cleaned up for a few days. Sometimes the introduction of fresh water in this way must be done often, and at other times only occasional doses of fresh water will be required. I have known a few cases where tubing or bleeder lines salted up so much that the salt had to be drilled out, and sometimes the tubing or bleeder line had to be pulled out of the well.

If water shows in a newly completed well one of three things is likely to be the case: 1 The well is badly cased; 2 it is drilled too deep, or 3 it is an edge well.

As a rule pumping water from gas wells is too expensive an operation in comparison with the gas recovery. I am personally acquainted with a good many gas wells and at the present time only know one well actually delivering to a pipe line which is being pumped regularly. In this particular case the operation has been going on for two or three years and has been very profitable to the producer.

In old fields where wells would naturally be tubed or have bleeder lines in them occasional bailing is often very helpful and by the use of winches mounted on trucks is an inexpensive operation in the case of shallow wells. We have found this operation expensive in wells over 2000 feet and generally of doubtful value.

The installation of syphon lines of proper size is worth a lot of consideration when the well is first drilled. If the area promises a well of good size it would be a safe rule to see that a bleeder line is installed on the completion of the well. Such a syphon or bleeder line would extend clear to the bottom of the hole and would have the bottom three to eight feet slotted or perforated and this syphon or bleeder line connected into the pipe line in such a way that it can be operated separately from the side gate from which large amounts of gas would have to be taken. In this way fluid would be taken out of the well a little at a time as it ordinarily comes from the well and not in slugs of several barrels each as is often the case where wells are not equipped with bleeder or syphon lines. This is particularly the case where a well is finished with a larger size producing string like 8¼-inch or 9⅝-inch.

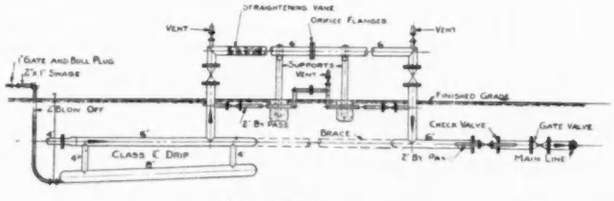
Care of Wells

The first requirement in regard to the care of wells is a frequent record on the working pressure of each well and also on its rock pressure when it is not delivering gas. Of course, the ideal way to do that is to have a recording gauge installed at each well to keep this record continuously. In many cases the installation of such recording gauges would run into an expense that if often considered prohibitive.

A well does not have to accumulate much fluid, whether it be water, gasoline, or oil until the results of this accumulation will quickly show up in a lessened working pressure if the well is feeding, or in rock pressure if the well is temporarily shut in. This is one of the quickest ways to determine the current condition of any gas well. If a well has been equipped with a syphon line the fluid can be gotten out quickly and with very little waste of gas through such line. If the syphon line is connected into the pipe line so that gas from it can be taken without taking gas from between the tubing and the casing the fluid can be removed and separated in the drips without waste of gas.

The handling of fluid from wells in this manner has a great bearing on uninterrupted operation of pipe lines, for the reason that fluid is drawn from the well a little at a time as it enters it and, being a very small proportion of the total volume then handled, is separated in the ordinary drips and does not enter the lines where it might later freeze the line off entirely. Without a bleeder line fluid accumulates in the well and is finally driven out in slugs which either run the drips over or goes by them altogether, according to their type of construction.

Equipping wells with bleeder lines is the means of curtailing



ELEVATION

FIGURE 2
Standard meter run for gas wells

gas waste that would otherwise be required in order to lift fluid through the casing by means of having it wide open to the atmosphere. I blew a 50,000,000 well 20 minutes through a two-inch bleeder line—the rock pressure was 645 pounds. At the end of the 20-minute period there were 495 pounds between the tubing and the casing.

Another very important result from the installation and proper operation of bleeder lines comes from the fact that the pressure at the sand face is never released and the hole is much less likely to cave, thereby filling up the well and there is little or no chance of the well being drilled deeper by the quick release of pressure as is the case when the full size of the casing is open to the atmosphere and pressure on the sand face is released. In many cases producing gas sands are not far above the water strata, and in cases of a producing gas well it is often not desirable to have any knowledge of the extra location of such water strata.

It is sometimes necessary to blow wells, but that is more often overdone and may cause great harm to the well through collapsing the casing, causing open hole to cave in, or drilling the well deeper when same is not desirable. In my judgment installation of proper bleeder lines or a syphon line early in the life of the well is of prime importance in the care of wells in the safe and uninterrupted operation of field lines in the winter time, and it is my belief that wells whose fluid is handled promptly will have considerably greater useful life and yield of gas than those wells will have where such lines are never installed, or, as often happens, where such lines are installed too late to be of greatest benefit. Of course, the ideal time to install a bleeder line is when the well is drilled. Sometimes this is impossible because of great pressures and large volumes, and because of the fire hazard entailed. We have seen the tubing process, which is now available in many fields, from the Southern States, Incorporated, used with remarkably good results.

Handling High-Pressure Wells and Casingheads

Figure 5 is intended to show what is believed to be an ideal hook-up for a high-pressure well. Some are inclined to criticise the expenditure necessary in a master gate when a bleeder line is to be installed through it, however, in the case, particularly of a large high-pressure well, the master gate could be closed when the last joint of tubing was above it while being removed for any operating reason, and the well put in control while new tubing is being made ready to start in the hole. This is sometimes essential because sizes of tubing have to be changed occasionally. Sometimes the tubing is cut out by sand in the gas, or eaten out by

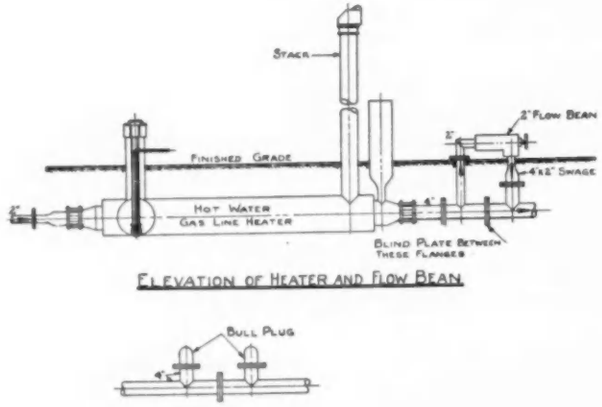


FIGURE 3
Heater-flow bean and separator conn.

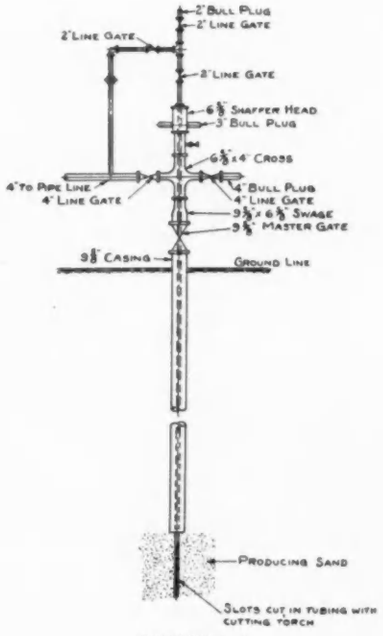


FIGURE 4
Bottom of gas well sychon

chemicals present in the well, or is no longer serviceable because of the action of salt water; therefore, this master gate is believed entirely justifiable in such cases. Cross tees for high-pressure wells are rather expensive but many times the additional opening is more than worth its cost when gas is required for other purposes on the lease or temporary sales in the vicinity are available.

This hook-up shows a 6⅝-inch gas head with two three-inch side openings and in under the packing and lock nut are slips for the purpose of holding part of the weight of the tubing. In case of a small high-pressure well the cross tee and its side gates could be eliminated and the gas head used in its place; however, in the case of a large well the space between the inside of the gas head and the tubing is small and should the well in question produce even small amounts of sand the tubing might be quickly ruined by the sand passing through such a small area at high speed. Your attention is called to the fact that a well so equipped can feed through the bleeder line alone, or through the side gate alone, or through the cross tee, or all at the same time. The well can be blown through the bleeder line alone or through the side gate from the other opening on the cross tee.

It has been found in the experience of many production men that a satisfactory connection from the well is made by swagging down from the side gate, or from a point far enough from the side gate so the bleeder connection is inside the swag, with two-inch of sufficient weight to safely carry the rock pressure of the well. Such two-inch line should be laid at least 200 or 300 feet from the well, and this often along the edge of the property, to a suitable point for the installation of the hot water heater. (See Figure 3.) Before entering the heater the gas is expanded into a four-inch line which is surrounded by a water chamber. The packing off between the outside of the gas line and this water chamber is accomplished by one-half of an ordinary center ring and one follower from an ordinary pipe coupling. The bolts are ordinarily spaced to fit the holes in the follower and welded to the swedge made from one-half of the center ring to the size pipe desirable to be used for the outside of the water chamber. Outside of the water chamber is a fire chamber. On the outlet of this hot water

THE OIL INDUSTRY IS BECOMING PIPE CONSCIOUS

Realization of the terrific cost of pipe failure is causing oil producers and refiners to become more and more pipe conscious. The industry's pipe replacement bill, if it could be totalled, would reach a staggering amount. This condition has not been caused by the use of cheap pipe but has been due to the inability of the older ferrous pipe materials to stand up in tubing, casing, line pipe, cargo lines on tankers, and refinery piping in general, especially when acid and salt bearing crude must be handled.

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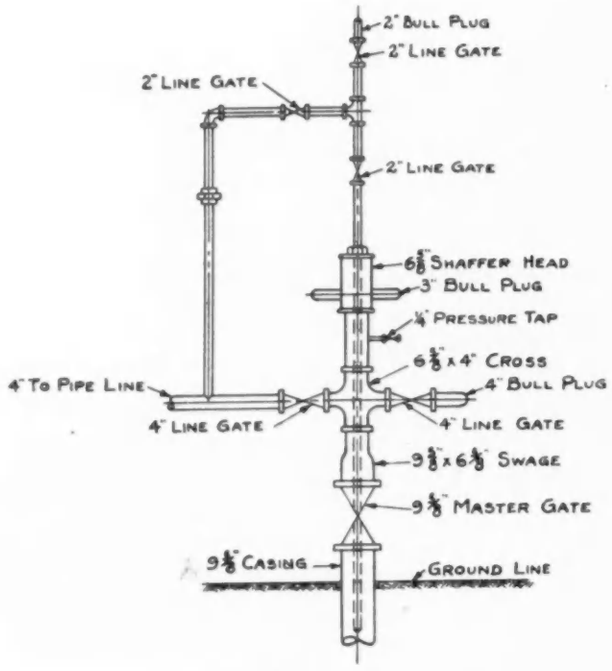

FIGURE 5
Ideal well hook-up

heater, at a convenient distance, is a meter flange in which a blind disc is inserted. A two-inch riser of a length sufficient to allow the flow bean to be above ground level is welded onto this four-inch pipe. On the upstream side of of the meter flange a two-inch flow bean is then attached, in horizontal position as respects the valve stem, above this nippel with a flange and welded ell. This bean is built on the principle of an angle valve and on the inlet of the flow bean is a ventura nipple. Instead of there being discs in it like a gate there is a pointed forging on the end of the flow bean stem which fits into the down-stream end of the ventura nipple when the flow bean is closed. The outlet of the flow bean looks down and in it is screwed a swedge nipple, usually from two inches to four inches. This four-inch is extended down to the four-inch line coming through the heater on the downstream side of the blinded meter flange. Unless the gas on the outlet of the flow bean is expanded quickly into a larger size pipe than the flow bean is made to screw onto, freezing is much more apt to occur. As I understand it, these flow beans were made primarily for oil. The oil entered on top of the cone which fits into the ventura nipple when the bean is closed. On gas wells, however, this flow bean works better if the flow of gas enters all around the point of the cone. In this manner there appears to be less chance of freezing or of ice interfering with the operation of the bean.

After the gas has passed the flow bean and entered the line again it passes at such distance as may be convenient through a drip, and from that vertically into the meter setting. (See Figure 2.)

Attention is called to the raised portion of the meter bypass directly under the meter flange. This has two purposes:

1. It is more readily accessible.

2. On the downstream side a tap is welded in so that a supply of gas, relatively free from moisture, for the fuel requirements of the hot water heater, is conveniently available.

This is to show the construction of the heater. The drawing (Figure 6) is self-explanatory.

This form of cutting device (Figure 7) is often used on high-pressure wells in place of a flow bean. It consists of a block gate with two small by-passes in such sizes as may fit the well to be handled. This kind of a cutting device is in general use and is just as dependable as the heater located immediately ahead of it, between it and the well. The gates in the by-passes should be flanged gates or screwed gates with unions in the by-pass pipes. The reason is that stops, or gates, used for cutting high pressures in these small lines, are worn out quickly, in many cases by sand and rock particles in the gas, and must be renewed at frequent intervals. The cost of the two kinds of control devices are not much different; it is largely a matter of choice. A small percentage of the open flow from a high-pressure well can be successfully taken through the Christmas Tree type of cutting device than through a flow bean. Relatively not less than five or six per cent of the open flow of a well can be dependably handled by the flow beans with which I am familiar, while per cents as small as one-half of one per cent have been successfully taken by the Christmas Tree type of cutting device.

Testing of Wells

There are three methods of testing gas wells most commonly used in the Mid-Continent field:

1. **The Pitot Tube Method.** This, as far as I know, was the original method for testing gas wells. It measures the ability of a well to deliver gas against atmospheric pressure, which is a condition seldom productive of profit. This method is not very accurate; probably if the same man tested the same well twice in the same day the results he would obtain might vary up to five per cent. In testing wells by this method considerable risk of drilling the well deeper is taken, considerable danger of fire is always present, danger of collapsing the casing, and of making the open hole in the well cave in is also always present.

2. **Ninety Per Cent Method.** This method was developed and is now being used very successfully in Osage County, Oklahoma, by the Indian Territory Illuminating Oil Com-

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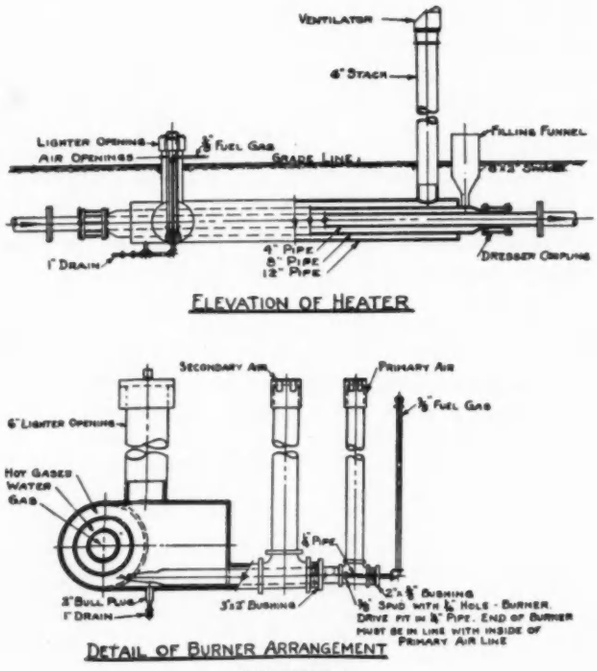

FIGURE 6
Hot water gas line heater

IDEAL

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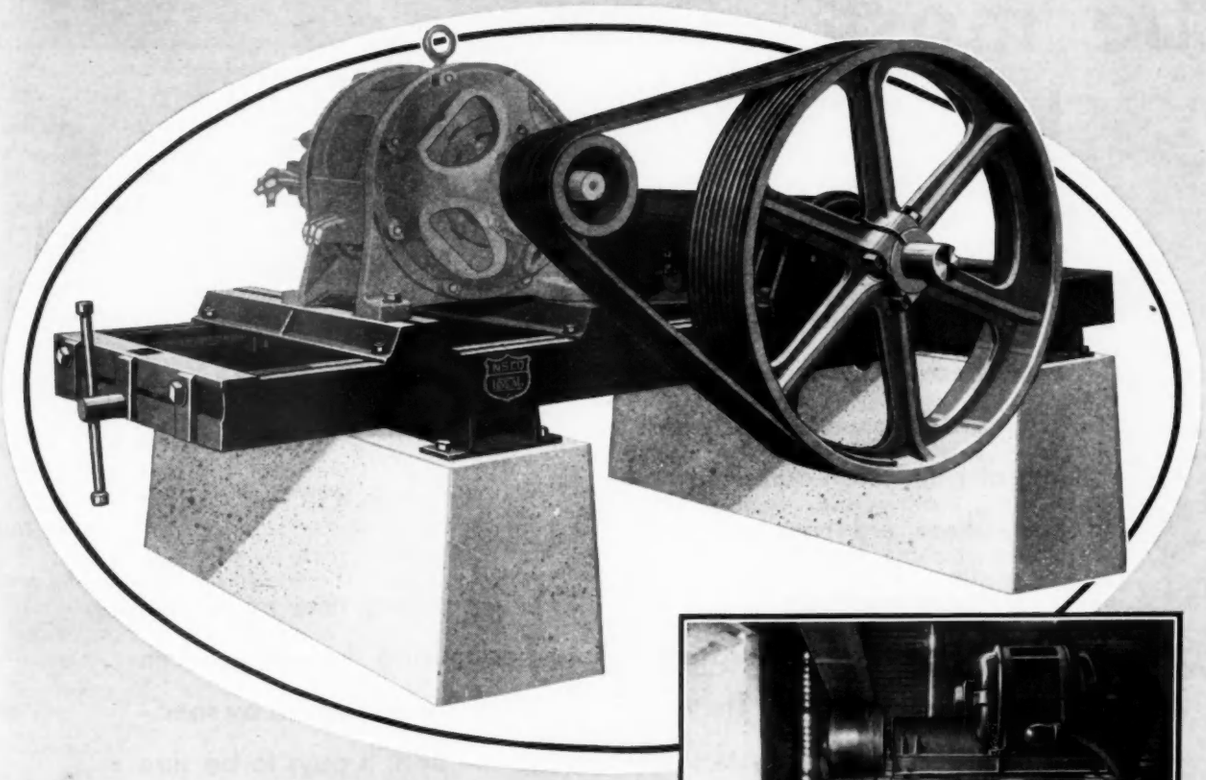
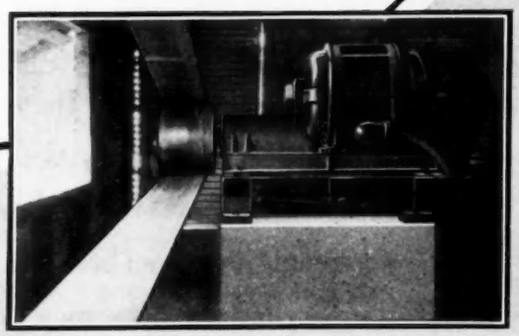
V-BELT COUNTERSHAFT

TYPE "E"





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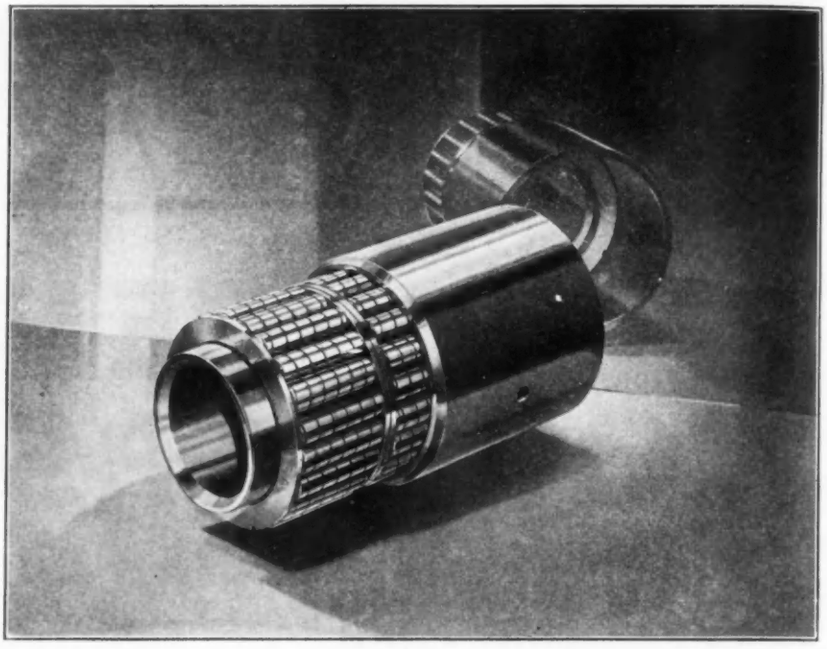

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East Texas Production Shows 70,850-Barrel, Daily Decline

For the first time since intensive development was started in East Texas, there was a decline in production last week of 70,850 barrels daily. This is the first definite and favorable sign recorded there to indicate that proration is actually in force. Although Oklahoma production was up 56,800 barrels last week, the substantial decline in East Texas resulted in bringing the daily average of the United States down to 2,468,700 barrels, a decrease of 6400 barrels from the preceding week. This marks the most favorable turn in the production situation of the United States since East Texas became a market factor.

Production of the East Texas fields declined from 339,750 barrels daily, during the week ending May 2, to 268,900 barrels during the past week. On the basis of the revised allowable of 160,000 barrels, this area is still producing an excess of 108,900 barrels daily. Other districts in Texas are maintaining production schedules at or near the allowable figures.

The sharp upturn in production of Oklahoma was due to increased runs from the Oklahoma City field, where the daily average outlet amounted to 222,200 barrels.

Of particular market significance is the way major purchasing companies are accepting the higher output of the Oklahoma City field. This field had an average yield of 220,000 barrels daily last week and pipe line companies ran an average of 185,000 barrels daily from the field.

Purchases on this scale are in excess of what the Oklahoma Corporation Commission accepted as the market demand when its last order was written, for it set 175,000 barrels daily for the month of May. But buyers evidently do not consider the present output as beyond requirements, for the higher output is not accompanied by any talk of proration or further restrictions.

The buying at Oklahoma City can be estimated from the following list, which represents purchases of Saturday of last week.

Sinclair	59,475
Empire	36,475
Stanolind	36,275
Carter	16,650
Operators	4,730
Shell	4,430
I. T. I. O.	2,555
Petroleum Pipe Line	2,015
Prairie	1,740
Magnolia	1,405
Tidal	1,260
Crude Oil Purchasing	1,140

In some instances these runs represent only runs from owned leases but the concerns with the larger totals are also buyers of oil. It is not publicly known that any Oklahoma City oil is now moving below the posted schedule. Furthermore, it seems safe to predict that purchases in the field will be increased as output may be increased, although it is also known that the field must be kept under proration, since buyers could not assume the burden of taking the possible output with restrictions removed.

Prices Remain Low

Prices for Mid-Continent oils remain at their low level but it is of some value to know that there is a level at which the buyers of oil are willing to accept deliveries, even when the totals are higher than had been anticipated.

Outside of the Oklahoma City pool, conditions remain unchanged. Under the restrictions of proration, oil is being taken as produced and there are few reports of sales below posted figures. No below schedule contracts are reported.

The increased taking of Oklahoma City oil has come about despite the fact that Oklahoma is now witnessing the movement of Texas oil by pipe lines into the territory formerly held by the Mid-Continent. Both the Gulf and the Standard of New Jersey, which have completed pipe lines eastward from Oklahoma in the past year, are now moving oil from the East Texas field into the Pittsburgh area. Systems of Humble Pipe Line Company, Oklahoma Pipe Line Company, and the new Ajax line are used to pump East Texas oil for the Standard Oil Company of New Jersey account. Gulf Pipe Line Company's system from Oklahoma toward the Gulf Coast has been converted in part into a system, whereby East Texas oil is moved northward and delivered to the new line of Union Gulf Oil Company for movement eastward.

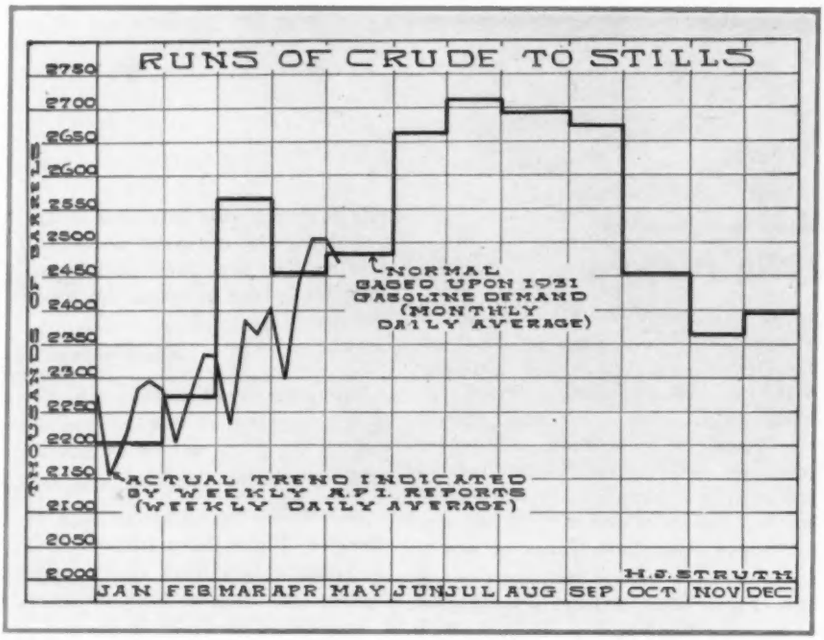
California Production Up

California also showed a gain in daily average production last week of 11,800 barrels, boosting the excess of the state to 38,300 barrels daily. Increases were reported in California from Kettleman Hills, Ventura Avenue, Santa Fe Springs and Playa del Rey. A few of the heavy oil fields of California have shown a tendency to increase production as a result of the better prices posted for heavy oil. The Kettleman Hills field is now producing almost 40,000 barrels of oil daily, an increase over the preceding week of about 10,000 barrels.

These were the only changes of any consequence during the past week, the most noteworthy being the decline in East Texas production. The excess above allowables is still above 200,000 barrels daily, with Texas and Oklahoma showing excesses of 125,100 barrels and 102,850 barrels, respectively.

With production in East Texas being placed under control, despite continued drilling of new wells, it is apparent that the situation is beginning to present a hopeful aspect. In view of the fact that the demand for crude in other Mid-Continent districts is becoming more brisk, as indicated by the figures received from Oklahoma, it is logical to expect that any further declines in East Texas production will to some extent be offset by gains in other districts, in accordance with market requirements.

MARKET SECTION



Gasoline Stocks Increase; Runs to Stills Are Reduced

Runs to stills in the United States for the week ending May 9 were reduced to the extent of about 75,000 barrels daily, despite which fact stocks of gasoline recorded a gain over the preceding week of 197,000 barrels. This situation apparently reflects a slackening in demand from gasoline jobbers, following a spurt in shipments in the preceeding week. It is believed that the retail demand for gasoline continued good during the past week and that the increase in refinery stocks is but the result of a temporary fulfillment of shipments to points of distribution.

According to the American Petroleum Institute, runs to refinery stills for the week ending May 9 aggregated 16,285,000 barrels, a daily average of 2,326,000 barrels. This indicates, on a Bureau of Mines basis, that total runs averaged about 2,396,000 barrels daily, as compared with 2,471,000 barrels during the week ending May 2. In contrast with the sharp withdrawal of gasoline from storage during the week ending May 2, is the sudden upturn in stocks as of May 9. Reports to the American Petroleum Institute show that gasoline stocks on May 9 amounted to 45,810,000 barrels, compared with 45,613,000 barrels on May 2.

The accompanying chart shows the status of runs to stills in the United States, in comparison with normal re-

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Week Ending May 2, 1931

(Figures in barrels of 42 gallons)

District—	Potential Capacity (Daily) Total	Reporting	Per Cent	Crude Runs to Stills Total	Daily Average	Per Cent Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	612,700	612,700	100.0	3,185,000	455,000	74.3	8,453,000	8,027,000
Appalachian	141,300	132,500	93.8	543,000	77,600	58.6	1,772,000	1,203,000
Indiana, Illinois, Kentucky	390,800	381,000	97.5	2,331,000	333,000	87.4	6,191,000	3,589,000
Oklahoma, Kansas, Missouri	461,100	412,200	89.4	1,956,000	279,400	67.8	3,650,000	4,017,000
Texas	809,000	743,500	91.9	3,867,000	552,400	74.3	7,976,000	8,701,000
Louisiana-Arkansas	266,600	262,000	98.3	1,117,000	159,600	60.9	2,305,000	2,299,000
Rocky Mountain	150,100	139,700	93.1	349,000	49,900	35.7	1,847,000	824,000
California	898,500	887,600	98.8	3,447,000	492,400	55.5	*13,419,000	98,977,000
Total Week May 2	3,730,100	3,571,200	95.7	16,795,000	2,399,300	67.2	45,613,000	127,637,000
Total Week April 25	3,730,100	3,571,200	95.7	17,030,000	2,432,900	68.1	46,451,000	127,401,000
Total May 3, 1930	3,678,900	3,518,400	95.6	18,074,000	2,581,900	73.4	**54,082,000**	135,647,000
The Texas and Louisiana Gulf Coastal Figures Shown Below are Included Above in the totals of their respective districts.								
Texas Gulf Coast	529,500	529,500	100.0	2,876,000	410,900	77.6	6,798,000	6,205,000
Louisiana Gulf Coast	147,500	147,500	100.0	733,000	104,700	71.0	2,140,000	1,300,000

NOTE: In all the refinery districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

**Revised due to change in California.

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand Second Quarter 1931	Economic Limit Second Quarter 1931	Daily Average Last week	Daily Excess Last week	Daily Average Since Jan. 1	Daily Excess Since Jan. 1†
Arkansas	58,600	56,000	46,950	—9,050	48,654	—5,346
California	591,500	*500,000	538,300	38,300	530,104	30,104
Kansas	118,300	114,000	108,600	—5,400	109,938	438
Louisiana	78,900	71,000	70,500	—500	68,510	—2,490
Oklahoma	551,000	*505,000	607,850	102,850	507,021	22,021
Texas	798,700	*767,000	892,100	125,100	754,759	—90,759
Balance of U. S.	254,000	240,000	204,400	—35,600	206,863	—25,637
Total	2,451,000	2,253,000	2,468,700	215,700	2,225,849	109,849

*Allowable.
†Excess based upon average allowable to date.

quirements. It will be noted that refinery operations have been conducted on a fairly sound basis, having been maintained at rates which rather closely conform to the limits prescribed thus far in the year. The fact that automobile manufacturers are speeding up operations to meet a more brisk demand for new cars is a particularly encouraging sign. An article in the Wall Street Journal of recent date calls attention to the fact that substantial gains in automobile production and sales were recorded in April. It further points out that prospects for the month of May point to output approximately on par with April. Confidence is growing among motor executives that a well sustained retail demand for motor cars will continue into the summer months, as opposed to the sharp falling off which developed in June of last year and continued until late fall.

Such information is particularly important at this time and lends confidence to the belief that the demand for

Cracked Gasoline Production

Week Ending May 2, 1931

(Barrels of 42 gallons)

District	Potential Total	Charging Reporting	Capacity Per Cent	Production Total	Production Daily Average
East Coast	246,900	222,900	90.3	570,000	81,400
Appalachian	45,900	43,400	94.6	142,000	20,300
Ind., Ill., Ky.	294,200	280,200	95.2	547,000	78,200
Okla., Kans., Mo.	219,900	197,900	90.0	378,000	54,000
Texas	395,500	379,400	95.9	806,000	115,100
Louisiana-Arkansas	109,400	106,900	97.7	223,000	31,900
Rocky Mountain	95,100	95,100	100.0	121,000	17,300
California	182,700	182,700	100.0	318,000	45,400
Total Week May 2	1,589,600	1,508,500	94.9	3,105,000	443,600
Total week Apr 25	1,589,600	1,508,500	94.9	3,229,000	461,300
Total May 3, 1930		Not Available			
The Texas and Louisiana Gulf Coastal Figures Shown Below are included above in the totals of their respective districts.					
Texas Gulf Coast	305,000	300,500	98.5	637,000	91,000
Louisiana G. Coast	77,000	77,000	100.0	160,000	22,900

Imports of Petroleum at Principal United States Ports

(Barrels of 42 gallons)

	Total Month April	Total Month March	Week Ended May 2	Week Ended April 25
AT ATLANTIC COAST PORTS—				
Baltimore	1,050,000	857,000	330,000	60,000
Boston	316,000	587,000	.....	155,000
New York	3,150,000	4,469,000	1,002,000	648,000
Philadelphia	893,000	815,000	342,000	171,000
Others	1,066,000	655,000	46,000	*212,000
Total	6,475,000	7,383,000	1,720,000	1,246,000
Daily Average	215,833	238,161	245,714	178,000
AT GULF COAST PORTS—				
Galveston District	82,000	126,000	.....	17,000
New Orleans and Baton Rouge	102,000	80,000	.....	.....
Tampa	.....	61,000	.....	.....
Total	184,000	267,000	.....	17,000
Daily Average	6,133	8,613	.....	2,429
AT ALL UNITED STATES PORTS—				
Total	6,659,000	7,650,000	1,720,000	1,263,000
Daily Average	221,966	246,774	245,714	180,429
Distribution of Total Imports is as follows:				
Crude	3,663,000	3,942,000	1,032,000	468,000
Gasoline	1,156,000	1,409,000	278,000	243,000
Gas Oil	47,000	196,000	.....	28,000
Fuel Oil	1,793,000	2,103,000	410,000	*524,000
Total	6,659,000	7,650,000	1,720,000	1,263,000

*—Revised.

California Oil Receipts at Atlantic and Gulf Coast Ports

(Barrels of 42 gallons)

	Total Month April	Total Month March	Week Ended May 2	Week Ended April 25
AT ATLANTIC COAST PORTS—				
Baltimore	154,000	311,000	113,000	81,000
Boston	.....	50,000	.....	.....
New York	576,000	663,000	206,000	224,000
Philadelphia	495,000	227,000	.....	114,000
Others	302,000	272,000	72,000	77,000
Total	1,527,000	1,523,000	391,000	496,000
Daily Average	50,900	49,129	55,857	70,857
AT GULF COAST PORTS—				
Total	120,000	197,000	.....	120,000
Daily Average	4,000	6,355	.....	17,143
AT ATLANTIC AND GULF COAST PORTS—				
Total	1,647,000	1,720,000	391,000	616,000
Daily Average	54,900	55,484	55,857	88,000
Distribution of Total California Oil Receipts is as Follows:				
AT ATLANTIC COAST PORTS—				
Gasoline	1,389,000	1,450,000	295,000	496,000
Kerosene	42,000	.....	.....	.....
Gas Oil	.....	73,000	.....	.....
Fuel Oil	96,000	.....	96,000	.....
Total	1,527,000	1,523,000	391,000	496,000
AT GULF COAST PORTS—				
Gas Oil	120,000	197,000	.....	120,000

MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
April	657,050	122,200	640,950	206,800	42,100	57,800	138,700	75,950	625,700	2,576,250	77,018,100
May	663,300	131,000	662,350	203,900	39,900	53,800	137,150	82,500	623,700	2,597,700	80,529,600
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April*	542,700	109,650	715,550	186,000	39,050	46,950	111,250	94,950	527,600	2,373,700	71,211,750
May 2	551,050	107,400	804,500	190,050	39,050	46,850	111,700	98,000	526,500	2,475,100	17,325,700
May 9	607,850	108,600	734,100	188,700	39,800	46,950	112,350	92,050	538,300	2,468,700	17,280,900
Increase	56,800	1,200	.....	.....	750	100	650	...	11,800	.....	.....
Decrease	.....	.....	70,400	1,350	...	...	...	5,950	.....	6,400	44,800

*Preliminary—Subject to revision.

Last Week's Daily Average Production by Districts

TEXAS	May 9	May 2
Panhandle District	55,700	56,500
North Texas	57,600	57,200
West Central Texas	25,550	25,150
West Texas	212,600	212,650
East Central Texas	54,750	50,750
East Texas	268,900	339,750
Southwest Texas	59,000	62,500
Texas Gulf Coast	158,000	159,700
Total Texas	892,100	964,200
OKLAHOMA	607,850	551,050
CALIFORNIA	538,300	526,500
KANSAS	108,600	107,400

LOUISIANA	May 9	May 2
North Louisiana	39,800	39,050
Louisiana Gulf Coast	30,700	30,350
Total Louisiana	70,500	69,400
ARKANSAS	46,950	46,850
MOUNTAIN STATES		
Wyoming	41,400	43,750
Montana	8,400	8,650
Colorado	3,950	4,250
New Mexico	38,300	41,350
Total Mountain States	92,050	98,000
EASTERN STATES	112,350	111,700
TOTAL UNITED STATES	2,468,700	2,475,100

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	1	5	1	3	..	..	..	2	722	245
California	13	8	13	6	..	..	..	2	22,200	7,200
Indiana	1	..	..	..	1	..	..	..	....	....
Kansas	9	5	4	2	2	2	3	1	5,795	4,975
Kentucky	3	8	2	3	1	5	..	..	55	13
Louisiana	13	10	4	2	5	3	4	5	2,755	2,175
Michigan	1	..	1	..	..	..	..	..	400	....
Mississippi	..	2	..	..	..	..	..	2	....	....
New York	1	7	..	..	1	6	..	1	....	....
Ohio	10	17	4	2	4	10	2	5	79	10
Oklahoma	16	39	1	14	4	9	11	16	7,185	45,185
Pennsylvania	..	2	..	..	..	1	..	1	....	....
Texas	111	113	80	71	4	10	27	32	536,535	474,055
West Virginia	11	17	1	2	8	12	2	3	1	4
Total	190	233	111	105	30	58	49	70	575,727	533,862
Increase this week	..	..	6	..	..	..	..	..	41,865	....
Decrease this week	43	..	..	..	28	..	21	..	....	....

Comparison of Permits Granted for New Wells

	Week Ending May 9	Previous week	This week 1930	Total this month	This month 1930	Total this year	Total this date last year	1930 year total
Arkansas	3	..	..	3	4	20	41	108
California	10	15	12	25	31	150	272	922
Louisiana	8	11	25	19	38	131	391	948
Kansas	17	8	13	25	38	183	358	944
Oklahoma	14	11	78	25	165	412	1,152	2,830
Texas	133	114	176	247	389	1,943	2,875	7,052
Total	185	159	304	344	665	2,839	5,089	12,804

MARKET SECTION

gasoline will probably exceed earlier estimates. It is seen, therefore, that the projected demand for refinery crude during June and July will undoubtedly be sustained by the gasoline demand outlook.

East Texas Oil Affects California Crude Sales

The steady rise in East Texas production and wide distribution of the output in this new Mid-Continent field has effected the movement of refined products from California ports. This overlapping has not been pronounced in districts ordinarily dominated by shipments through the Panama Canal from the West, but in areas where competition has been keenest during more normal times, East Texas products have proved to be a good entering wedge.

Lower gasoline prices, including both f.o.b. Los Angeles harbor and delivered quotations, has had a depressing effect on both the producing and refining divisions. Higher gasoline prices have been difficult to establish, due to weakness in other parts of the country and overproduction in general. The net back to shippers in cargo lots is the lowest in years, and perhaps was never so low.

Fuel oil and crude shipments have not been affected as much as refined shipments. This has been due to the better schedules maintained for heavy oil and fuel oil.

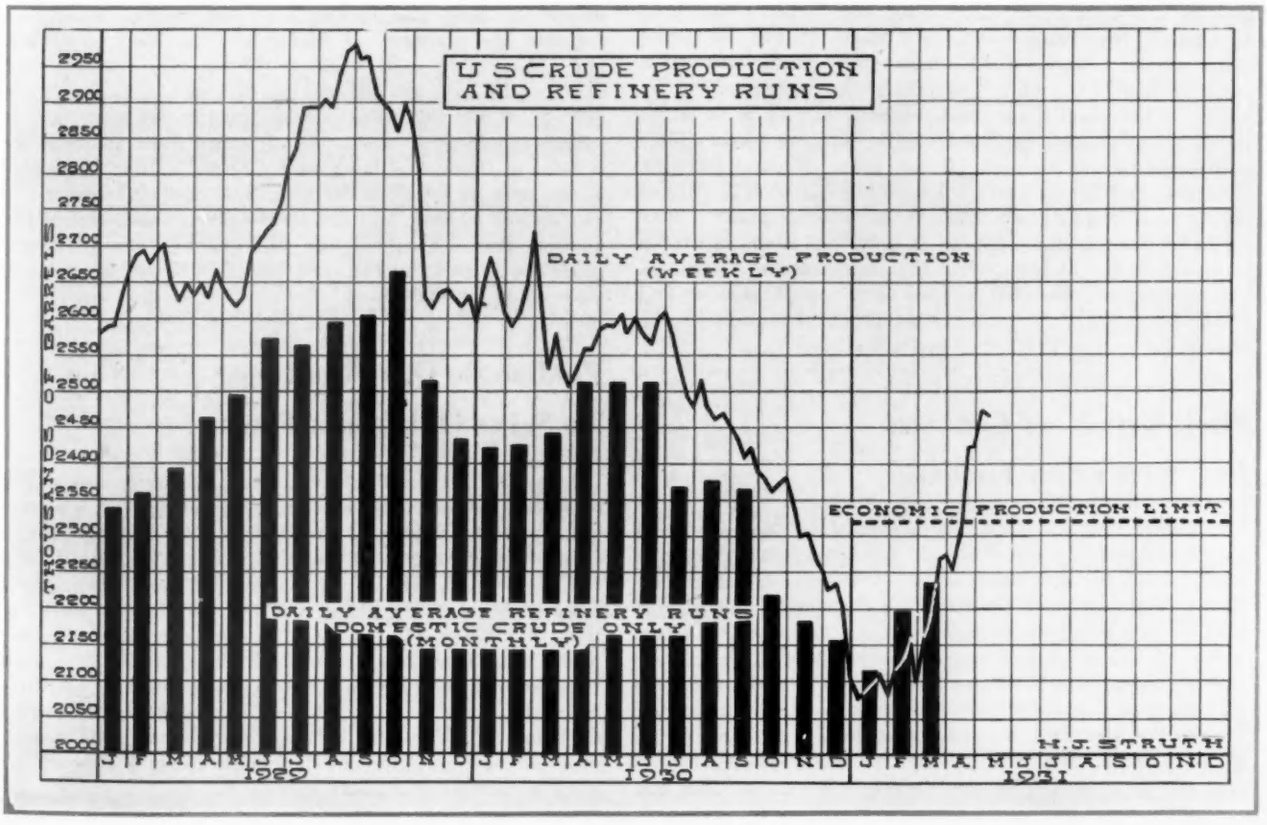
Oil Producers Sales Agency is pressing its claim for recognition among all independent operators in the state. It is a non-profit organization, designed to find the best outlets for all oil produced by independent operators. More than 60 per cent of the independent production has been won over to the cause, which has the endorsement of the major operators.

Ways and means of reducing production to 460,000 barrels are being considered, but a definite plan of attack to pare the surplus has not been found. The output is now the highest in weeks, due to increases at Kettleman Hills and Ventura Avenue. It will be a difficult matter to hold production down in the former field, although not more than 50,000 barrels will be produced if the original plan is followed.

High gravity crude is supposedly bringing only 35 cents per barrel, but it would be a difficult matter to buy any large quantity at anywhere near this price. Small premiums are being paid for the "free" oil, while bids of 35 cents have been placed for light oil in quantities up to 300,000 barrels at a time.

Sinclair Meets Gravity Scale for East Texas Oil

Better demand for crude in a number of Mid-Continent districts has lent a stronger tone to the crude market. Posting of the Mid-Continent gravity scale of prices for East Texas oil by the Sinclair Refining Company on May 12 created considerable surprise in market circles. This company has had a flat posted price of 30 cents a barrel in that district, while the new scale will range from 61 cents to 67 cents a barrel. Sinclair interests have contracted for large quantities of East Texas oil at fixed prices to be delivered over the next few months and upon termination of these contracts the company will have developed a large production of its own there to sup-



MARKET SECTION

ply the 12-inch trunk line now being built by Sinclair Pipe Line Company. Another encouraging aspect is the better demand for Oklahoma City oil which has had a tendency to give the market outlook a stronger tone than for some time.

Counter to the slightly improved tone in the crude market is the weak tone of the gasoline market. The introduction of a third grade of motor fuel by many of the larger marketing companies is apparently creating considerable competition in the posting of lower prices. The combination of three grades of gasoline and the ability to buy natural gasoline at extremely low prices is creating a cut-throat condition that is growing steadily worse. Wholesale gasoline prices are now as low as three cents a gallon, with isolated instances where quotations are even lower. Buyers appear to be buying only sufficient quantities of gasoline to meet immediate requirements, despite existing low prices. If East Texas production shows further signs of curtailment in the next few weeks, it is likely that the firmer tone of the crude market will be reflected in increased buying of gasoline. It appears now that wholesale gasoline prices are about at their bottom and any improvement in the tone of the crude market will have a favorable effect upon the gasoline market.

Line Will Give Outlet To Pecos County Area

San Angelo, Texas.—Market relief for 25 shallow oil wells in the Pecos Valley field, located in an isolated part of northwestern Pecos County, is to result from the construction of a 17-mile combination four and two-inch pipe line by Chas. S. Messenger and Lum Wadsworth, both of Grand Falls, to the Grand Falls townsite pool, where connection with Wickett Pipe Line Company's four-inch line will be made. These wells are credited with having a potential production of about 800 barrels daily, and the owners have contracted to sell their oil for one year. Wickett Refining Company and Bluebonnett Oil Refining Company, affiliated concerns with plants at Wickett, have contracted to take up to 600 barrels daily, paying 35 cents per barrel delivered at Grand Falls. It is reported that producers will pay 12½ cents transportation charges per barrel to Messenger and Wadsworth until their line is paid out, thus netting the former 22½ cents per barrel at the well.

Shell Gets Navy Contract For West Coast Fuel Oil

Washington, D. C.—Criticisms that the Navy Department had awarded contracts for fuel oil to a foreign-controlled company arising from the fact that Shell Oil Company, American subsidiary of Royal Dutch Shell, an English-owned company, had been the low bidder at the recent opening of proposals for the supply of 3,500,000 barrels of fuel oil for West Coast delivery with a price of $1,697,500, May 12, were met with the statement that the department had in all ways conformed with legislation enacted last Congress, requiring the purchase of domestic oil where possible. The only measure of relief obtained by the domestic oil producers through their fight for an oil tariff last session came in the form of amendments to the naval and independent offices appropriation bills offered by Representative W. A. Ayres of Kansas, requiring the navy and shipping board to purchase only oil produced and refined in this country, even though it might cost more than foreign-produced oil, providing the excess cost was not considered by the heads of the departments to be excessive.

Following the recent opening of bids, Shell Oil Company was found to have quoted the lowest prices for oil and according to navy officials, the department had no choice as to making the award, providing other elements of the contract, involving standards of product, etc., met all legal requirements.

"The notices submitted by the Navy Department for purchase of this oil, I am informed," Congressman Ayres said May 12, "Called for American produced and American refined oil, and Shell Oil Company, although a subsidiary of a foreign company, made the lowest bid. This company, however, is an American corporation."

Pipe Line Across Water Reservoir Must Be Tight

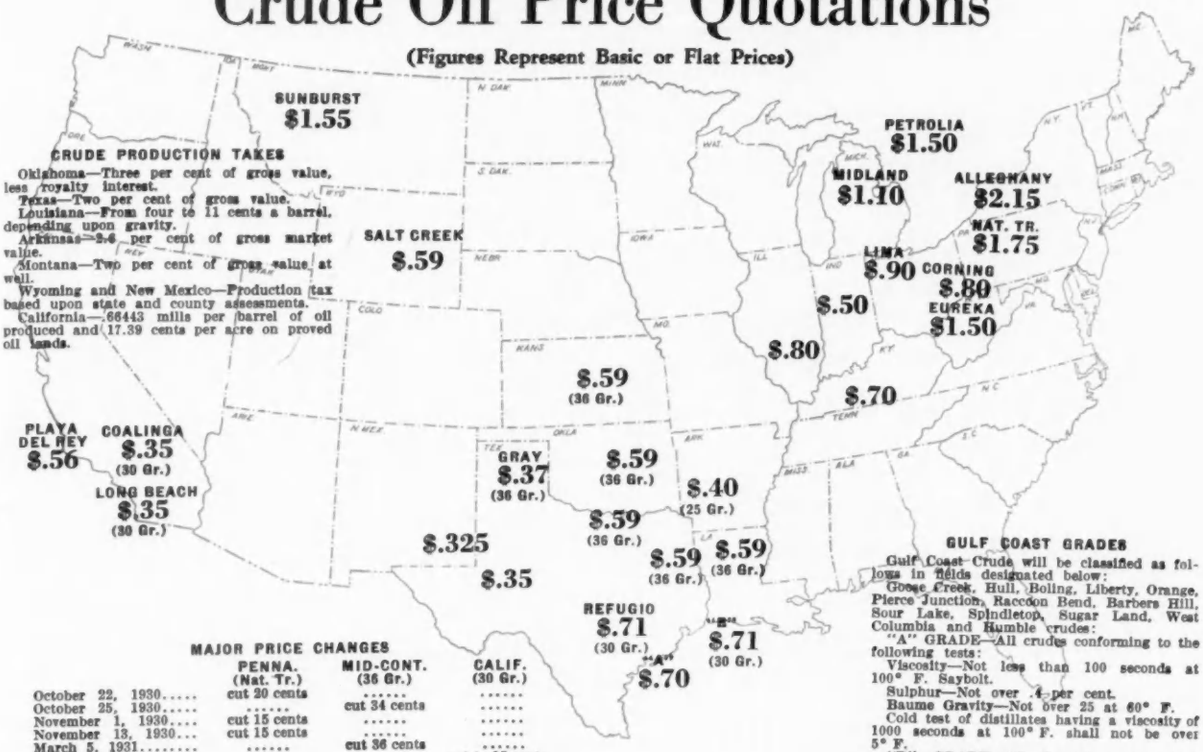
Fort Worth, Texas.—Replacement work is being started by The Texas Pipe Line Company on a unit of its Wichita Falls-Fort Worth trunk line system that must be flawless because of the serious consequences that would follow a leak of any sort. Fort Worth and Tarrant County have joined in the construction of a huge water reservoir in the northwest portion of the county and squarely over the right-of-way of the above company's six- and eight-inch lines. Approximately 30 miles of new line would be required to build around the reservoir, and to avoid such expense the company is taking out the two small lines and substituting with a single 10-inch line. About three miles of 10-inch will be required to cut across the "neck" portion of the lake, and a large portion of same will be submerged from 30 to 40 feet of water when the reservoir is filled to its normal level, thus offering a difficult problem in the even of a leak in the line. The new pipe line will be electrically welded, and about 4100 feet, representing that portion that will cross the old channel of the Trinity River's west fork, will be made up of 54.73 pound pipe, with river clamps attached.

Panhandle Gas Pipe Line To Serve Oklahoma Town

Amarillo, Texas.—Panhandle Light & Power Company is to award contract this week for construction of a natural gas line from Dumas, Texas, via Stratford to Boise City, Oklahoma, a distance of about 75 miles. The line will consist of about 35 miles of six-inch welded pipe, starting from Shadler Bros. et al's gasser on the John Lowry land, Section 237, Block 44, H.&T.C. Ry. Survey, Moore County, near Dumas townsite, to Stratford, Sherman County. About 40 miles of five-inch pipe will be used in building northwest from the latter point to Boise City. Cimmarron Utilities Company of Boise City will operate the line upon completion. The general office of Panhandle Light & Power Company is located at Kansas City.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.

Texas—Two per cent of gross value.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 per cent of gross market value.

Montana—Two per cent of gross value at well.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (30 Gr.)
October 22, 1930.....	cut 20 cents	.....	.....
October 25, 1930.....	.....	cut 34 cents	.....
November 1, 1930....	cut 15 cents	.....	.....
November 13, 1930...	cut 15 cents	.....	.....
March 5, 1931.....	.....	cut 36 cents	.....
March 30, 1931.....	.....	.....	cut to 35 cents
April 23, 1931.....	cut 10 cents	.....	.....

GULF COAST GRADES

Gulf Coast Crude will be classified as follows in fields designated below:

Goose Creek, Hull, Boling, Liberty, Orange, Pierce Junction, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugar Land, West Columbia and Humble crudes:

"A" GRADE—All crudes conforming to the following tests:

Viscosity—Not less than 100 seconds at 100° F. Saybolt.

Sulphur—Not over .4 per cent.

Baume Gravity—Not over 25 at 60° F.

Cold test of distillates having a viscosity of 1000 seconds at 100° F. shall not be over 5° F.

"B" GRADE—All Coastal crude which does not meet the test for "A" grade.

Official Postings and Differentials

(Revised to May 12, 1931)

California: (Prices effective March 30).

In all **Los Angeles Basin** fields (except Playa del Rey) oil from 14 gravity to 20.9 gravity is 65 cents. Deduct 3 cents for each degree up the scale to 30.9, making this the lowest at 35 cents. Fields in this group include **Alamitos Heights, Long Beach, Seal Beach, Torrance, Athens, Rosecrans, Dominguez, Santa Fe Springs, Montebello, Huntington Beach, East Coyote, Richfield and Brea-Olinda.**

Playa Del Rey: 56 cents flat, 20-26 gr.

In the **San Joaquin Valley** fields, 11 to 11.9 gravity crude is 50 cents per barrel, 14 to 14.9 gravity, 55 cents. Differential of 2 cents off each degree up the scale makes 30 gravity and above 35 cents per barrel. Fields in this group include **Coalinga, McKittrick, Kern River, Sunset-Midway, Elk Hills, Buena Vista Hills** and **Lost Hills.**

Santa Paula 14 to 19.9 gravity, 60 cents; 20 gravity, 58 cents; 21 gravity, 56 cents, and take off 3 cents for each degree up to and including 28 gravity. **Orcutt** 14 to 19.9 gravity, 55 cents, and take off 2 cents for each degree up to and including 29 gravity which is 35 cents.

Oklahoma-Kansas-North Texas: (Effective March 5, 1931). Below 29 gravity 43 cents with differential of 2 cents to 40 and above. Magnolia Petroleum Company posts 40 cents for below 26 gravity with differential of 1 cent to 29 gravity, 43 cents. From 29 to 40 and above, same schedule as foregoing. North Texas posting applies to oil produced in **Wichita, Wilbarger, Archer, Northern Young, Van Zandt, Mexia, Powell, Boggy Creek, Richland, Wortham, Currie.**

Ranger, North Texas, Moran and Cook County oil: Below 29 gravity, 33 cents with differential of 2 cents for each degree to 40 and above which is posted at 57 cents a barrel.

Texas Panhandle: (Effective April 21, 1931).

Gray County: Below 35 gravity, 33 cents with differential of 2 cents for each degree to 40 and above which is posted at 45 cents a barrel.

Carson-Hutchinson Counties: Below 35 gravity, 30 cents with differential of 2 cents for each degree to 40 and above which is posted at 42 cents a barrel.

East Texas: (Effective March 26). Same scale of prices as Oklahoma-Kansas-North Texas.

West Texas and New Mexico: (Effective April 21, 1931).

Winkler and Pecos County, Texas: Flat price of 35 cents a barrel.

Lea County, New Mexico: flat price of 32.5 cents a barrel.

Southwest Texas: (Effective April 21, 1931).

Refugio Heavy: Below 25 gravity 60 cents a barrel. **Refugio Light:** 25-25.9 gravity 61 cents with differential of 2 cents for each degree to 35 and above which is posted at 81 cents a barrel. **Mirando Crude:** 60 cents. **Salt Flat:** 53 cents. **Darst Creek:** 53 cents. **Pettus:** 75 cents. **Luling:** 38 cents; **Corsicana Heavy** 38 cents.

Gulf Coast: (Effective April 21, 1931).

Grade "A": 70 cents a barrel. **Grade "B":** Below 25 gravity 60 cents a barrel; 25-25.9, 61 cents with differential of 2 cents for each degree to 35 and above which is posted at 81 cents a barrel. **High Island,** 75 cents; **Jennings,** 80 cents; **Markham,** 50 cents.

North Louisiana and Arkansas.

Pine Island, Haynesville, Bull Bayou, El Dorado, Cotton Valley, Zwolle: Below 29, 43 cents with differential of 2 cents to 40 and above. Magnolia Petroleum Company posts 40 cents for below 26 gravity with 1 cent differential to 29 gravity, 43 cents. From 29 to 40 and above, same schedule as foregoing. **Stephens:** Below 29, 54 cents with differential of 4 cents to 32 and above. **Smackover,** 45 cents; **El Dorado east field** 70 cents; **Bellevue,** 45 cents.

Rocky Mountain States. (Effective Mar. 10, 1931).

Salt Creek: 29-29.9 gravity 45 cents with differential of 2 cents to 37 and above. **Elk Basin** and **Grass Creek,** 90 cents; **Big Muddy,** 65 cents; **Lance Creek,** 98 cents; **Rock Creek** 66 cents; **Mule Creek,** $1.20; **Rex Lake,** $1.10; **Osage,** 50 cents; **Cat Creek,** $1.25; **Pondera,** $1.45; **Sunburst,** $1.55; **Hogback, N. M.,** $1.40.

Eastern States. (Effective Mar. 10, 1931).

Bradford, Allegany district, $2.15; **National Transit** oil, $1.75; **Southwest Pennsylvania** oil, $1.60; **Eureka P. L.** (W. Va.) $1.50; **Buckeye P. L. oil,** $1.25; **Corning** crude, $1.15; **Somerset** in **Eureka Lines,** 75 cents; **Ragland,** 60 cents; **Oil City, Ky.,** 70 cents.

Michigan—Midland, $1.10; **Muskegon,** below 29 gravity, 65 cents with differential of 4 cents to 35 gravity; 31-31.9, 92 cents with 3 cent differential to 44 gravity and above.

Central States: (Effective March 5, 1931).

Wooster, 99 cents; **Lima,** 90 cents; **Waterloo,** $1.20; **Indiana,** 50 cents; **Princeton,** 80 cents; **Illinois,** 80 cents; **Western Kentucky,** 75 cents.

Canada: (Effective October 28, 1930).

Petrolia, $1.50; Oil Springs, $1.57.

Summary of Field Operations, April, 1931

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Recapitulation—United States

State—	Completions April	Total Completions Jan.-April	Producers April	Total Producers Jan.-April	Gas Wells April	Total Gas Wells Jan.-April	Failures April	Total Failures Jan.-April	Initial Production Oil April	Initial Production Total Oil Jan.-April	Initial Production Gas* April	Initial Production Total Gas* Jan.-April	Total Production April	Total Production Jan.-April
Oklahoma	100	498	51	264	18	72	31	162	170,505	1,092,150	180¾	769	16,281,400	60,143,750
Kansas	29	158	12	70	11	40	6	48	5,750	37,770	171	507¾	3,289,650	13,219,900
Texas (outside Gulf Coast)	408	1,246	272	653	19	88	117	505	1,635,818	2,435,607	577¾	2,048½	21,467,050	70,051,350
Gulf Coast	55	299	33	159	..	7	22	133	24,520	87,065	...	185½	5,579,450	22,135,700
North Louisiana	24	113	6	23	6	32	12	58	897	11,882	130¼	701¼	1,171,400	4,924,150
Arkansas	8	39	4	19	2	8	2	12	308	1,186	8¾	65½	1,409,100	5,852,250
Eastern States	255	1,170	78	362	108	472	69	336	3,709	16,962	145	896	3,337,300	13,206,300
New Mexico	2	20	1	13	..	1	1	6	5,190	45,263	4½	35¾	a	a
Rocky Mountain	b	b	b	b	b	b	b	b	b	b	b	b	2,848,200	11,599,650
California	24	152	22	130	..	..	2	22	11,600	91,525	...	...	15,828,200	63,586,200
Total	905	3,695	479	1,693	164	720	262	1,282	1,858,297	3,819,410	1,218	5,209¼	71,211,750	264,719,250

*Millions of cubic feet.
(a) Included in Rocky Mountains estimates.
(b) Not available.

April Breaks All Records For New Production of Oil

Undiminished drilling of new wells in the East Texas area during April resulted in boosting new oil production of the United States to a record-breaking level. While the total number of wells completed only amounted to 905, new oil production attained a new high of 1,858,297 barrels, a gain over March of 1,153,771 barrels. East Texas alone, was credited with a new production total for April of 1,549,395 barrels from 200 producing wells completed. This indicates an average initial per well of 7747 barrels. Since Oklahoma City only obtained 160,670 barrels of new oil production in April, it is seen that drilling operations in the United States, outside East Texas and Oklahoma City, were productive of only 148,232 barrels of new oil production. This presents a serious situation that cannot fail to have a demoralizing effect upon the market structure of the industry.

Some idea of the extent of untimely development in flush areas can be obtained from the records of a few fields that were responsible for the sharp gain in new production in April. Following are the totals of initial production reported for several such fields:

Kilgore	539,000
Rusk	548,820
Longview	167,500
Joiner	147,075
Gregg	147,000
Oklahoma City	160,670
Van	52,500
Reagan County	11,710
Smith County	10,000
Barbers Hill	10,570
Total	1,794,845

Past Twelve Months

The record for the past 12 months is an interesting study for comparative purposes, the following table giving the field statistics for all states:

Month—	Completions	Producers	Gas wells	Failures	Initial Prod.
January, 1930	1,918	1,142	296	480	685,325
February	1,463	881	201	381	990,869
March	1,544	794	220	530	665,535
April	1,702	1,023	180	499	776,024
May	1,973	1,125	228	611	771,977
June	1,679	950	223	506	580,997
July	2,144	1,167	306	671	845,068
August	1,837	930	310	597	1,160,055
September	1,165	619	208	338	833,109
October	1,199	587	245	367	615,002
November	1,253	644	217	392	901,046
December	1,479	650	310	519	979,111
January, 1931	1,156	519	211	426	796,860
February	815	348	192	275	459,727
March	819	347	153	319	704,526
April	905	479	164	262	1,858,297

Note—Rocky Mountain data omitted.

EAST TEXAS COMPLETIONS AND PRODUCTION

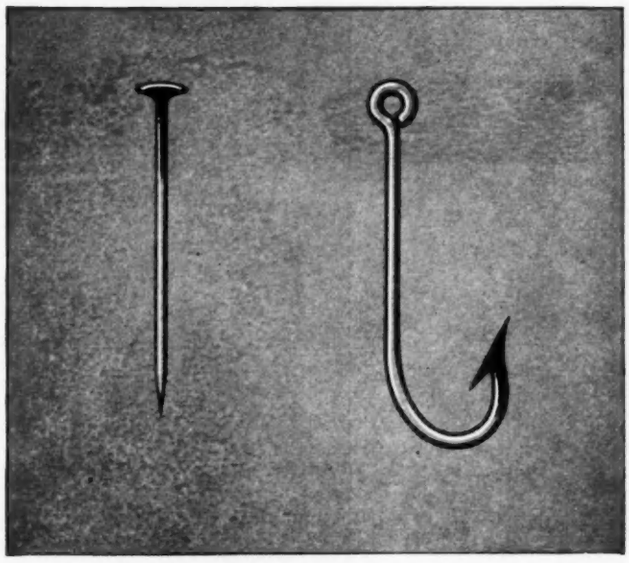
County of Field	Total Completions Jan.-Apr.	Total Initial Production Jan.-Apr.	Total Production Jan.-Apr.
Gregg	32	256,500	.....
Joiner-Bradford	37	147,075	3,823,550
Kilgore	49	539,000	5,267,800
Longview	19	167,500	1,644,850
Rusk	87	965,030	.....
Total	224	2,075,105	10,736,200

United States Production

State—	Daily Production April*	Daily Average April*	Total Average March
Oklahoma	16,281,400	542,700	531,900
Kansas	3,289,650	109,650	110,550
Texas (outside Gulf Coast)	21,467,050	715,550	585,000
Gulf Coast	5,579,450	186,000	177,950
North Louisiana	1,171,400	39,050	40,250
Arkansas	1,409,100	46,950	47,550
Eastern States	3,337,300	111,250	108,800
Rocky Mountains	2,848,200	94,950	95,400
California	15,828,200	527,600	528,100
Total	71,211,750	2,373,700	2,225,500

*Preliminary—subject to revision.

Would you rather stick yourself with a Pin OR A Fish hook ?



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THE GUIBERSON SPIRAL BOTTOM WATER PLUG TAKES A FISH HOOK GRIP ON THE WALLS OF THE WELL

In angler's language, "Fish hooks are h--- to get out, brother" —and you needn't change the order any when you're talking about the Guiberson Spiral Bottom Water Plug. The only thing it resembles more than a fish hook is a screw—with each spiral like a fish hook all by itself.

When collapsed, these steel spirals bite into the walls of the well, the space between the spirals filled with oakum, the best oil field packing known. Not a drop of water can get by and all pressures from below are ineffectual. The Guiberson Spiral Bottom Water Plug will not come out until it is drilled out.

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WICO ELECTRIC COMPANY
SPRINGFIELD, MASSACHUSETTS

Personal Mention—Men You Know

▼ ▼ ▼

Frank Burford, whose work in upholding the legal status of proration in Oklahoma has been outstanding, died at his home at Oklahoma City May 6. As counsel for several of the Oklahoma oil companies before the corporation commission, he led the fight to maintain proration into the courts. He was 47 years old and the son of John H. Burford, supreme court chief justice in territorial days. He had the distinction of being admitted to the Oklahoma bar at the age of 14, after which he attended the University of Kansas and later the University of Virginia. General Roy Hoffman was associated with Burford in legal practice.

K. R. KINGSBURY

K. R. Kingsbury has been re-elected president of Standard Oil Company of California. Other officials re-elected include W. H. Berg, vice president; H. D. Collier, vice president; R. W. Hanna, vice president; Oscar Sutro, vice president; J. H. Tuttle, secretary, and M. E. Lombardi, G. E. Kennedy, A. S. Russell and R. K. Davies, directors.

Rear Admiral F. T. Chambers, (CEC), director of naval petroleum reserves, is expected to visit Casper and Naval Reserve Number 3 (Teapot Dome) this week. He has recently completed an inspection of naval reserves in California.

R. W. Williams of Shreveport, has been transferred to Jackson, Mississippi, to take charge of the land department of United Gas Public Service Company there. He succeeds J. S. Dodson, transferred to Monroe, Louisiana.

Reginald G. Ryan, former district geologist in East Texas for Louisiana Oil Refining Corporation, is now engaged in consulting geology with headquarters in Tyler, Texas.

Henry E. Osburn, formerly supervising engineer for Standard Oil Company at Taft, California, has been transferred to the Los Angles basin district.

P. M. Longan, formerly an executive of Mexican Seaboard Oil Company, has been elected director of Lincoln Drilling Company, a California corporation.

George W. Holland, representative of the Department of the Interior, is spending some time in California while working to form a curtailment agreement affecting the Middle and South Domes at Kettleman Hills.

Norval White, Pacific Coast representative of the American Petroleum Institute, has returned to Los Angeles, following a trip through the territory.

M. J. Grogan, vice president and general manager of Louisiana Oil Refining Corporation resigned that position May 1. No successor has been named. Louisiana Oil Refining Corporation is now a subsidiary of Cities Service and is operated by Arkansas Natural Gas Corporation, another Cities Service subsidiary. Mr. Grogan has not announced his plans. He is past president of the Louisiana-Arkansas division of the Mid-Continent Oil and Gas Association.

J. A. Udden, prominent in oil circles and well known among oil geologists, died March 16, 1931. He was buried at Austin, Texas, the home of his parents, Dr. and Mrs. J. A. Udden. The deceased leaves a widow, three sons and a daughter, all living at his country home near Bentonville, Arkansas.

Selection of John H. Langston, Dallas, chief scout for Sun Oil Company, as president of the National Oil Scouts Association of America was made by acclamation by the membership during the eighth annual convention at Dallas, May 11 and 12. The new head of the scout body has been actively identified with its affairs since organization, and during the past year was vice president. Tom H. Perry of Seguin, Texas, was elected first vice president. J. W. Selby, Dallas, chief scout for Shell Petroleum Corporation, was chosen secretary-treasurer, and C. O. Strahan, Shreveport, was elected chairman of the executive committee. Attendance at the convention was below normal due to many members being on duty in East Texas and unable to leave their posts.

GORDON L. GANO

Gordon L. Gano has been appointed operating executive head of the recently organized Arkansas Pipe Line Corporation, which is in charge of the Shreveport-Longview eight-inch, electrically-welded oil line of Arkansas Fuel Oil Company (Cities Service). Officers of Arkansas Pipe Line Corporation are the same as of Arkansas Natural Gas Corporation, with Henry L. Doherty, president, and D. W. Harris, vice-president and general manager.

Don Bowers, general manager, W. C. Norris Company, Tulsa, spent several days in Houston last week, attending a division safety meeting.

J. M. Koch has been elected vice-president of Quaker State Oil Refining Company. Mr. Koch for the past eight years has been sales manager and general sales manager. Before this he was district manager of the Southwest territory, where his work attracted the attention of the company officials with the result that he was made sales manager.

J. M. KOCH

(*Continued from page 22*)

Central Pipe Line Company, Fort Worth, made an attempt to obtain relief from proration in operating its pipe line from the Joiner field to a tank car rack and affiliated refining concern at Overton, stating that a contract was held to run and purchase 1,500,000 barrels of crude from a property, but that proration only allowed 387 barrels production daily per well. This petition was denied. Leory G. Welsh, H. F. Gibson and F. H. Murphy, all of Fort Worth, were named as incorporators of the Central Pipe Line Company.

Judge J. D. Moore denied the Central Pipe Line Company its requested temporary injunction on May 11, and the plaintiff then demanded that a hearing of the case be made on its merits. May 22 was set by the court as the date for the hearing.

The Lide-Rowe Oil Company, supported by Lide-Tayloe Oil Company, Bill & Dave Oil Corporation, J. Z. Werby, C. M. Joiner, discoverer of the East Texas field, Geo. J. Greer and A. V. Lane, also filed petition in district court May 8, but withdrew in order that an amended petition to restrain the commission could be filed later.

Regulatory Oil Bill Placed Before Texas Legislature

Austin, Texas.—An amendment to House Bill 1052, written by T. F. Hunter, Wichita Falls, was introduced at the committee hearings on the bill, scheduled for Tuesday and Wednesday nights, May 12 and 13. The amendment concerns Section 2 of the proposed regulatory measure, which provides that the Texas Railroad Commission, in the event of waste in production, restrict production of the state and the total allowable, which shall be in the ratio which the total potential of the said pool bears to the total potential production of the state.

Austin, Texas.—A bill proposing to give the Texas Railroad Commission the power to regulate oil production, which was read before the meeting of the Oil States Advisory Committee here last week, has been submitted to the House of Representatives of the Texas legislature by Representative A. M. Howsley. It has been introduced as House Bill Number 1052 and is expected to be voted upon as soon as its merits have been fully discussed by members of the legislature.

The proposed bill was framed by Messrs. Rosser, Flynn, Landreth and Collett and was presented to Representative Howsley with the following statement:

"The hour has struck for an unselfish effort to solve the problems of over-production, and the far-reaching results thereof, and to accomplish this solution no man should take counsel with his own selffish interest but all should concern themselves alone in the public welfare. Those who sign this statement in supporting House Bill Number 1052, just introduced in the House of Representatives, are prompted only by a desire to give life and vigorous vitality to the bill enacted two years ago, then sponsored by the independent producers and opposed by the large companies, and to now render its provisions enforcible, and conscious as we are of the integrity of our purpose, we are undisturbed by the cheap and false appeal that we are serving Standard Oil Company, for the facts are that not one of us is now or has ever been in any way connected with that company, and we have consistently advocated just proration.

"Statements have been made in some newspapers that the Howsley Bill forbids drilling new wells in unproven territory and prohibits wildcatters from drilling until they have all lease holders in the block signed to agree to the plan of drilling. The bill, in no way, touches the subjects referred to. Apparently the persons making such statements confused the Howsley Bill with a draft of a bill prepared by the Oil States Advisory Committee, with which we have no connection whatever.

"We are enclosing herewith a statement of some of the reasons why House Bill Number 1052, just introduced, should be enacted into law, and we ask you to carefully read this statement and then communicate at once by wire with your representative and senator asking them to give their support to this measure."

HIGHLIGHTS OF THE REGULATORY MEASURE

1. Production in the state in excess of current reasonable market demand for current use and consumption shall constitute waste.

2. The Texas Railroad Commission, taking into consideration all correlative rights of all property owners of a pool, shall limit or restrict production to lessen or prevent dissipation or waste.

3. Unnecessary waste or dissipation of the gas and/or the gas energy of an oil pool is hereby prohibited.

4. Within five days after penetrating a gas horizon, an operator must shut in and confine the gas in the well until utilized for light, fuel or power.

5. Parties dissatisfied with rules or regulations of the Texas Railroad Commission may file a petition setting forth the particular cause or causes of objection in a court of competent jurisdiction in Travis County against the commission as defendant.

6. All laws or sections of laws in conflict with this act shall be repealed.

7. Penalties as prescribed by the Revised Civil Statutes of Texas shall apply in the enforcement of this act.

8. This act shall be cumulative of all laws relative to oil and/or gas and its conservation.

9. In case some portions of the law are found to be unconstitutional, no other parts of the act shall be abrogated.

10. That this act, because of public necessity, be acted upon without being read on three several days as provided by constitutional rule.

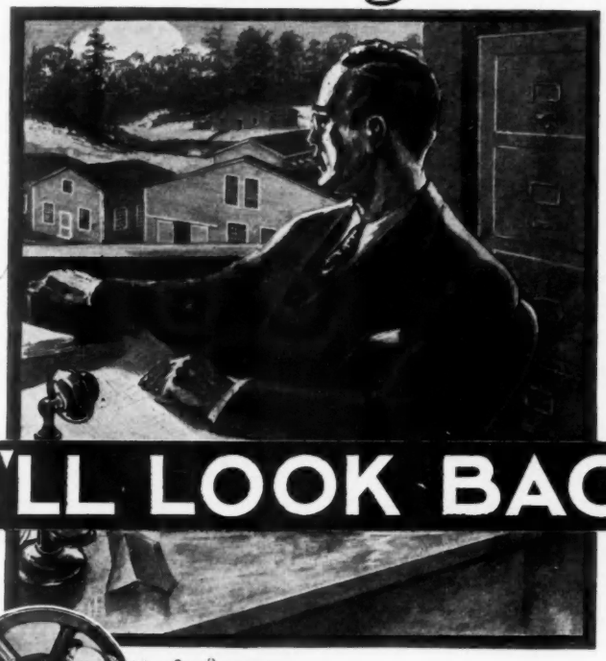
Phillips Reports Net Loss Of $619,351 First Quarter

Tulsa.—The first quarter report, 1931, of Phillips Petroleum Company shows a deficit of $619,351 for the period, after depreciation, depletion, retirements and other amoritization, against a net profit of $1,604,844 for the corresponding period of 1930. Gross profit of the period, however, was $14,297,248 against $11,931,003 for the first quarter of 1930.

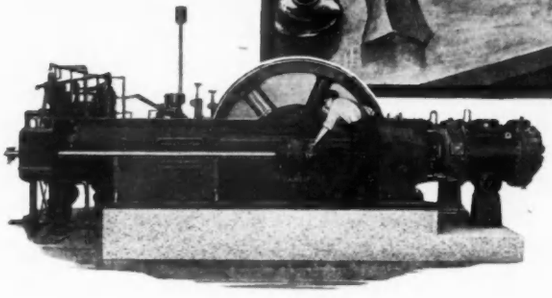
The statement by Frank Phillips, president, concerning the position of the company and conditions in the petroleum industry was:

"Our company is in sound condition and is meeting the situation by an orderly and gradual reduction in all items of expenditure. Our costs of producing, refining, transporting and distributing are unquestionably among the lowest and efforts are being made to further reduce them."

Some Day



YOU'LL LOOK BACK—



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Of course, this advance in the gas industry has called for a corresponding advance in equipment to handle it.

This TRANSIT 17 x 24" Twin Gas Engine-Gas Compressor was brought out to meet a definite demand for a thoroughly reliable up-to-date engine of this size and type. TRANSIT ENGINES have always been noted for their long life. Many of the first gas engine compressors built over thirty-five years ago are still in daily service. Strength is there by reason of correct design and not by a lot of unnecessary metal.

TRANSIT ENGINES are built strong— for long life.

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Institute Directors Plan Trip Through East Texas

New York.—A comparative study of the unrestricted development of the new East Texas oil fields and the unitized development of the Van field will be made by the board of directors of the American Petroleum Institute in June.

The members of the board will assemble at Longview, Texas, and leave in motor cars and buses on Tuesday, June 2, and proceed to the East Texas fields for an inspection of the area and will have luncheon at an oil company camp. Later they will visit the Van field, widely regarded as a model of oil field development on the unit plan, take dinner at Van and by motor car reach Dallas in the evening.

On June 3 and 4 the board will attend sessions of the first annual mid-year meeting of the Institute's Division of Production and hold informal conferences in the Baker Hotel at Dallas, and on June 5 will go to Fort Worth, for a scheduled board meeting in the Texas Hotel.

The inspection trip of the oil fields, the first undertaken by the board, is intended not only to provide members with first hand information on field development, and particularly on the new East Texas fields, but to provide the basis for discussion at the mid-year meeting of the Division of Production in Dallas and the board meeting at Fort Worth. While the Dallas meeting will be given over largely to technical problems of the producing branch of the industry, it is expected that the subject of proration, unitization and other methods of output stabilization will be considered.

The East Texas fields, located in Rusk and Gregg Counties, have been developed without restriction since completion of the first producing well started a drilling campaign and brought a new oil field boom to Texas. While the productive possibilities of the field still are undetermined and early belief that it is one of the most prolific yet discovered has been somewhat unsettled by the fact that several wells have shown indications of going to salt water, the output has been sufficiently large to threaten the efforts of both federal government, the state conservation agencies, and the petroleum industry to hold the country's oil production as near as possible to current demand.

While development of new oil fields ordinarily is welcomed as indicative of a new source of supply, the East Texas fields quickly came to be regarded as a menace because of the huge stocks of crude oil already above ground. Unorganized individual operators, imbued with the hope of monetary gain usually attending development of new pools are failing to heed economic conditions, long resisted efforts to unitize the fields or to prorate production. The result was that the flood of oil augmented the existing glut in the market. However, the Texas Railroad Commission began enforcing its proration orders in the fields on May 1.

The Institute's board of directors for some time have been on record as approving both proration and unitization, and a portion of the producing branch of the industry has accepted these policies as necessary and workable. But under existing law, it sometimes has been found impossible to reach any agreement on production limits or to halt the development of new fields. Proration in some instances has been enforced by state governments, notably those of Texas, Oklahoma and Kansas. Unitization, which calls for organization of individual operators into a holding corporation that can develop the field as if it were owned by one operator, has not been adopted as extensively because of the difficulty of organizing the hundreds of individuals and companies having widely varying policies and needs.

Gas Men Discuss Drilling Problems at Memphis Meet

Memphis, Tennessee.—The annual meeting of the Natural Gas Department of the American Gas Association opened here at the Hotel Peabody, Monday, May 11, with the meeting of the main technical and research committees and sub-committees. The remainder of the day was taken up with entertainment features. In the evening the annual dinner of the advisory committees, natural gas department, was held on the mezzanine floor. Early registration pointed to an attendance of well over 700.

The convention was formally opened the morning of the second day by H. C. Cooper, chairman of the natural gas department, who made his formal address following an address of welcome by Mayor Watkins Overton. Other speakers for the day included: Alexander Forward, managing director, American Gas Association; B. H. Gardner, Columbia Gas & Electric Corporation, Columbus, Ohio; and other gas company executives who made informal addresses; L. L. Dyer, Lone Star Gas Company, Dallas; H. J. Hoover, Cincinnati; E. J. Sullivan, Arkansas Natural Gas Corporation, Shreveport; H. D. Hancock, Henry L. Doherty & Company, New York; and others representing the industry throughout the country.

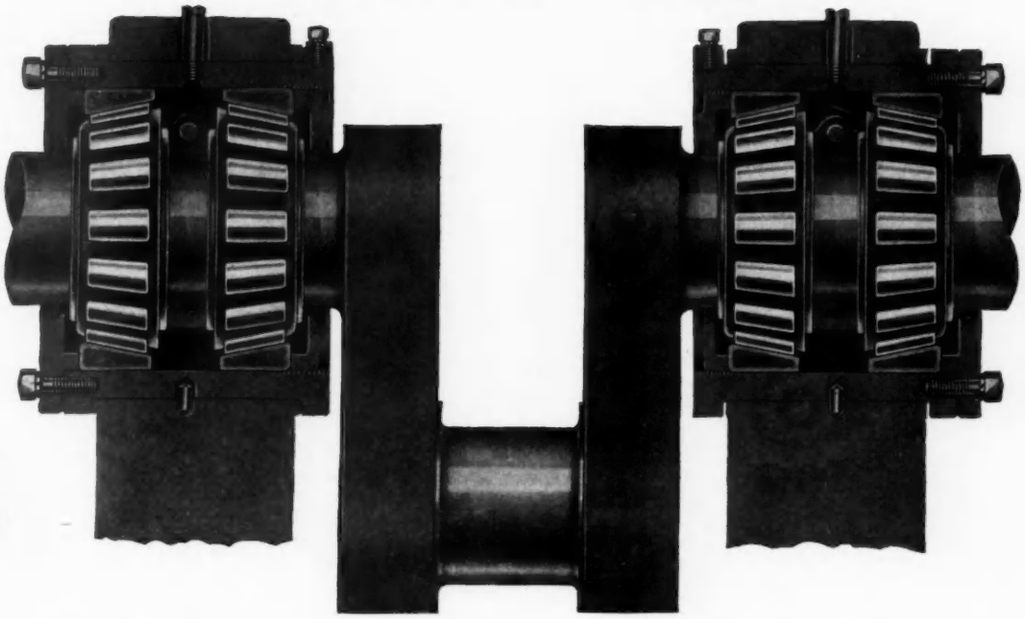
Wednesday morning, May 13, the meeting was given over to a drilling symposium, each speaker being scheduled to follow a prescribed outline for easy comparison, and give a presentation of the subject covering his section of the country. The afternoon session has another list of scheduled addresses by men well known in the industry.

The morning of the final day is scheduled to be given over to a production symposium with three speakers scheduled to follow a prescribed outline representing their several sections of the country. The morning and final session is scheduled to close with the report of the several committees, a report of the committee on final resolutions, and adjournment.

Entertainment was afforded members as well as wives of members. An old fashioned barbecue opened the week's entertainment which included a sight-seeing tour, a golf game, wrestling match, bridge luncheons for the women, and the grand ball, held in the hotel Tuesday evening, May 12.

Purchase of five 80,000-barrel steel tanks for erection in the Joiner field on the Geo. Eaton 95-acre lease has been announced by Paul Vitek, Fort Worth, trustee for the property, which has one completed well, and three tests getting under way. Well spacing agreements have been made with adjoining lease owners to this 95-acre tract so that only five wells will be drilled in taking care of offsets.

Timken Bearing Equipped Crank Shafts



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Engines with crank shafts mounted in Timken Bearings deliver more power at the point of application and last longer than those having plain crank shaft bearings.

The reason is that Timken Bearings eliminate frictional power loss, permanently support the crank shaft in dead true alignment and protect it against wear, radial, thrust and combined loads and uneven cylinder pressures.

The resulting smooth, vibrationless operation relieves every part of the mechanism of undue strain, and thereby greatly increases the dependability and lengthens the life of the engine.

Many prominent engine builders are now incorporating Timken Bearing Equipped crank shafts in their engines for power plus performance and maximum endurance.

Don't you want this modern refinement in *your* engines? The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN *Tapered Roller* **BEARINGS**

Prairie Repairs Pipe With Pressure on Line

A few years ago Prairie Pipe Line Company began the repair of old lines by the use of electric arc welding. It was found, after several months of experiment, that pits in the pipe could be welded without removing the pressure from the line. This was a big advantage in the repair of an old line, for when it was necessary to shut a line down and dig it up, it was just as economical to put in a new section of pipe as to try to repair the old pipe. The average cost of shutting down an eight-inch oil line of 450 pounds pressure is approximately $4000 per hour. Thus it may be readily seen that satisfactory repairs made without a shut-down saves considerable money. It is standard practice today to dig up an old line, clean it, weld it, repaint it and put it back into the ditch without even cutting the pressure off. In the past year or so there have been several hundreds of miles of pipe lines from six-inch to 16-inch in diameter that have been repaired in this manner without ever being taken out of service.

The method of repairing, as has been used by several pipe line companies, is somewhat as follows:

The first operation is the welding of the small pits in the pipe. This can very readily be done by a quick circular motion of the electrode such as used in filling any small hole. The action of the arc kills the rust spot, filling the hole with pure iron which will not rust in the future. If the pit is too large and deep so that there is danger of the electrode burning through, or if there are too many pits, it is advisable to put a small patch made of steel plate, or a section cut out of a smaller size pipe, over a series of pits and weld it into place. It will be found that the majority of the pitting will take place on the under side of the pipe. If the bottom side is pitted the whole length, the best procedure would be to cut out a half section from the next size larger pipe, slip it underneath and weld the longitudinal seam on both sides of the line. Then close the ends and the job is taken care of with ease and a minimum of welding.

If the pipe is bad both on top and bottom, the best method would be to put a section the full length of the pipe both top and bottom, as shown in Figure 1. The most feasible way of doing this is to put the top section on first, having it come down just to the center of the pipe. The bottom section should lap over the top section so as to extend just beyond the center line of the pipe. This gives a convenient lap to weld and one weld on each side the length of the pipe, together with the bell-hole welds at each end, is all that is required.

Many lines, particularly if old, have been covered with patches and clamped. In the majority of cases the gaskets underneath the patch can be cut back a short distance, the patch pounded down against the pipe and welded in position in four or five places so that the pipe clamp can be removed and the patch solidly welded to the pipe. This particular method is very easy to follow if a leak occurs in the pipe. First put on the patch with regular gasket, clamp it down with proper clamp, fit the edges of the patch to the pipe and weld it on, then remove the clamp.

In putting on complete sections of pipe it is not advisable to approach too close to couplings or flanges. It is best to stay back from two to six inches as shown in Figure 2. If it is desirable to cover up the coupling or flange completely, this is done by simply putting a section both underneath and over the joint, extending far enough on each side to pick up either the pipe itself or the patches as shown in Figure 3. The majority of pipe line companies have access to used or second hand pipe, or even pieces, that were readily obtainable for use in the repair of lines.

These corroded sections or bad spots in pipe lines are more likely to appear in low, damp places, such as a sag in the line, river crossing, etc. In a cross country line of several hundred miles length, there would probably only be about 50 miles that would have to be repaired very extensively.

In making repairs on pipe lines two types of equipment have been found very satisfactory. The first type is the standard gas engine-driven welder of 300 amperes, continuous capacity, mounted on a truck. This truck would also carry the necessary oxy-acetylene cutting equipment, pipe and other tools. This unit is particularly adaptable where there is considerable welding in a short distance, or for the continuous repair of a long line. For emergency repair of breaks and short stretches of line, a very suitable unit is a 300 ampere generator directly connected to and operated from the truck motor. This unit reduces the weight considerably from the previous type and leaves the body of the truck free for the carrying of pipe, tools, material and men. These two types are being used extensively by several pipe line companies that are most active in repair of old lines by the arc welding method.

FIGURE 1

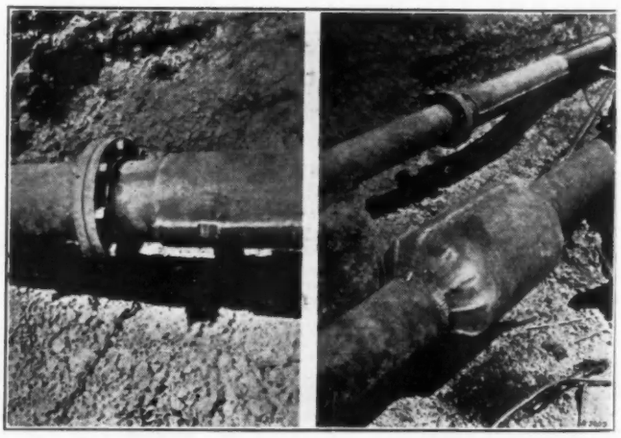
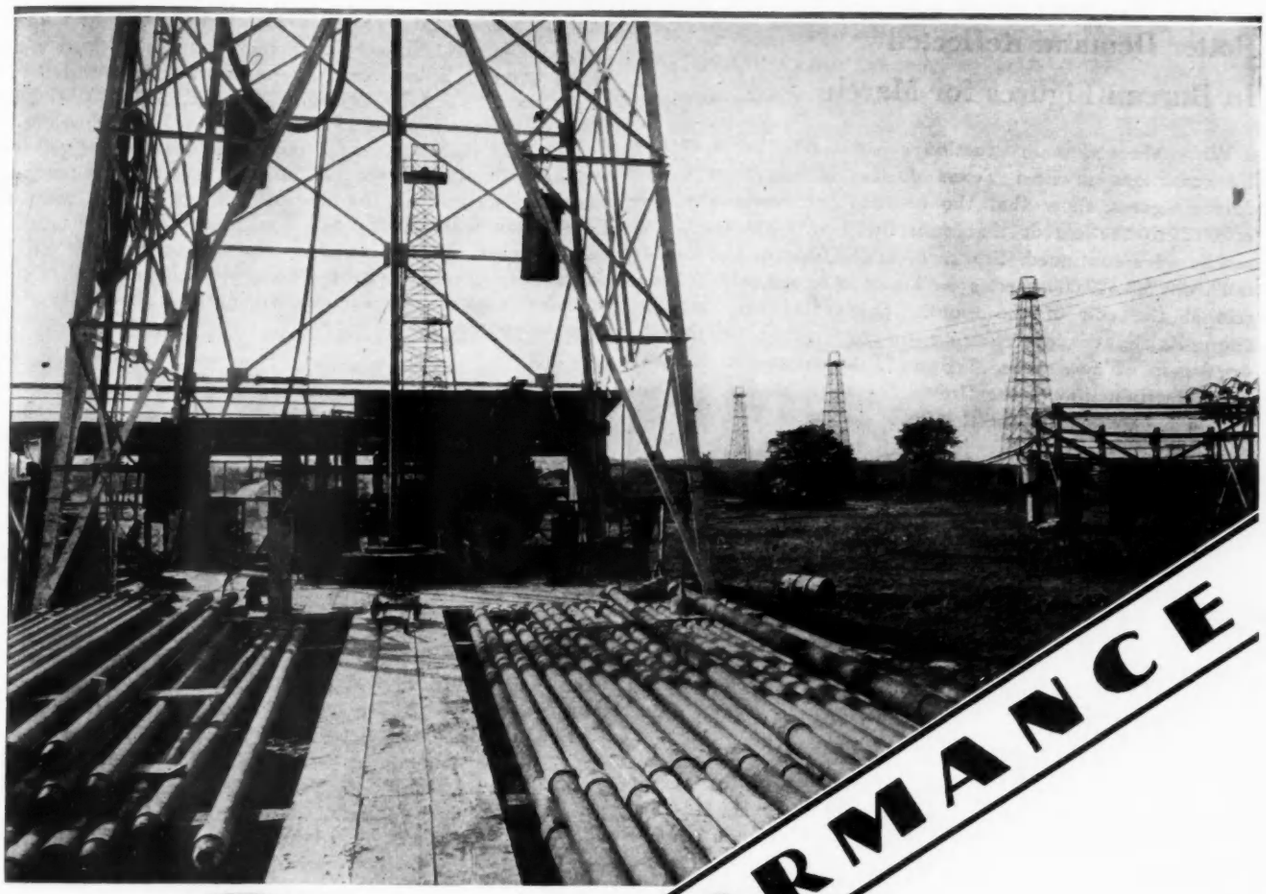


FIGURE 2

FIGURE 3



PERFORMANCE made this pipe AMERICA'S STANDARD

AS greater speeds, increasing depths, and other factors have entered to make more and more exacting demands upon drilling equipment, the remarkable strength and toughness, the unusual ductility, the strong threads, (especially protected from mill to derrick) and the all-round fitness of NATIONAL Drill Pipe have persuaded more and more operators to make it their standby.

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From pioneer days until now, performance has made NATIONAL—

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NATIONAL A.P.I. DRILL PIPE

Better Demand Reflected In Bureau Figures for March

While the economic situation continued to be menaced by conditions in East Texas during March, Bureau of Mines figures show that the demand for crude was increased to the extent that substantial withdrawals from stocks were continued. Stocks of crude East of California fell from 361,887,000 barrels on March 1 to 357,663,000 barrels at the end of the month. California crude stocks showed a slight increase during the same period. Continued drilling in of new wells in East Texas boosted the total new oil production of the United States to 705,000 barrels, a gain over the total for the same period of last year of about six per cent. This is shown in the accompanying barometer chart.

On the whole, the barometer continues to show improvement, with a majority of the supply factors being held below the rates of last year. The unfavorable factors, however, are low prices of crude and gasoline and continued high rate of imports of gasoline and other refined products. While stocks of crude and all oils are somewhat below the quantities held in storage in March of last year, it will be noted that natural gasoline stocks continue to mount to higher levels, being about 31 per cent above last year at the end of March.

Gasoline demand in the United States for the three months ending March 31 is shown to have exceeded the cumulative total for last year by slightly less than a million barrels. In view of general conditions, this is a favorable sign. Total domestic consumption for the three-month period amounted to 84,014,000 barrels, against 83,050,000 barrels for the same period of last year. The export situation, however, seems to be growing steadily worse, with the total for the three-month period showing a decline under last year of somewhat more than 5,000,000 barrels. Compared with THE OIL WEEKLY's estimate of domestic gasoline demand, the cumulative total for the first three months of this year has exceeded the estimate by 3,246,000 barrels. Following are the figures comparing estimated with actual gasoline consumption for the first three months of this year:

Domestic Gasoline Consumption

	Estimated	Actual	Actual, 1930
January	24,994,000	26,844,000	25,791,000
February	25,161,000	26,133,000	26,509,000
March	30,613,000	31,037,000	31,029,000
Cumulative	80,768,000	84,014,000	83,269,000

The foregoing figures make a favorable comparison, as it will be noted that the domestic demand for gasoline has not only exceeded the estimate but has also exceeded the total for last year. This is somewhat surprising since most students of economic conditions in the industry were inclined to the belief that there would be little, if any, gain in gasoline demand this year over last year. The sharp slump in exports, however, has resulted in reducing the total consumption under last year's cumulative total to the extent of 2,927,000 barrels. It is believed that present and prospective indications in the automotive field will probably create a sufficient demand for gasoline in the United States to offset the loss of foreign business.

Refinery runs have continued to grow with the demand for gasoline and other petroleum products, with the result that the rate of throughput in March amounted to a daily average of 2,374,000 barrels, an increase over February of 44,000 barrels. Subsequent developments have boosted refinery runs to a daily average of as high as 2,500,000 barrels, with gasoline stocks showing a definite downward trend. It is shown by these facts that the present rate of crude production is not seriously in excess of economic limits prescribed by the demand, except in the case of East Texas, where production has greatly exceeded market requirements. With proration efforts meeting with a fair degree of success in East Texas, it is believed that the industry faces a more encouraging outlook than it has for several months.

Large Contract for East Texas Crude Is Rumored

El Dorado, Arkansas.—It is reported here that Root Refining Company has contracted for 2,000,000 barrels of East Texas crude at 25 cents per barrel delivered at Atlas Pipe Line Company's eight-inch line near Longview, Texas, and to be pumped via Shreveport to Root's refineries here. It is known that Atlas Pipe Line Company will start pumping East Texos crude north from Shreveport through its eight-inch line to El Dorado during the present week at a pumping charge of 27½ cents per barrel from East Texas to El Dorado.

Last week Atlas Pipe Line Company's first oil reached Shreveport through its newly-laid, electrically-welded, eight-inch line. Arkansas Pipe Line Corporation (Cities Service) also received its first East Texas oil at Shreveport through its 66-mile, eight-inch, electrically-welded line from Longview.

Despite its reported new controsts for East Texas crude for use in El Dorado, Root Refining Company plans no disconnections from its present sources in south Arkansas oil fields.

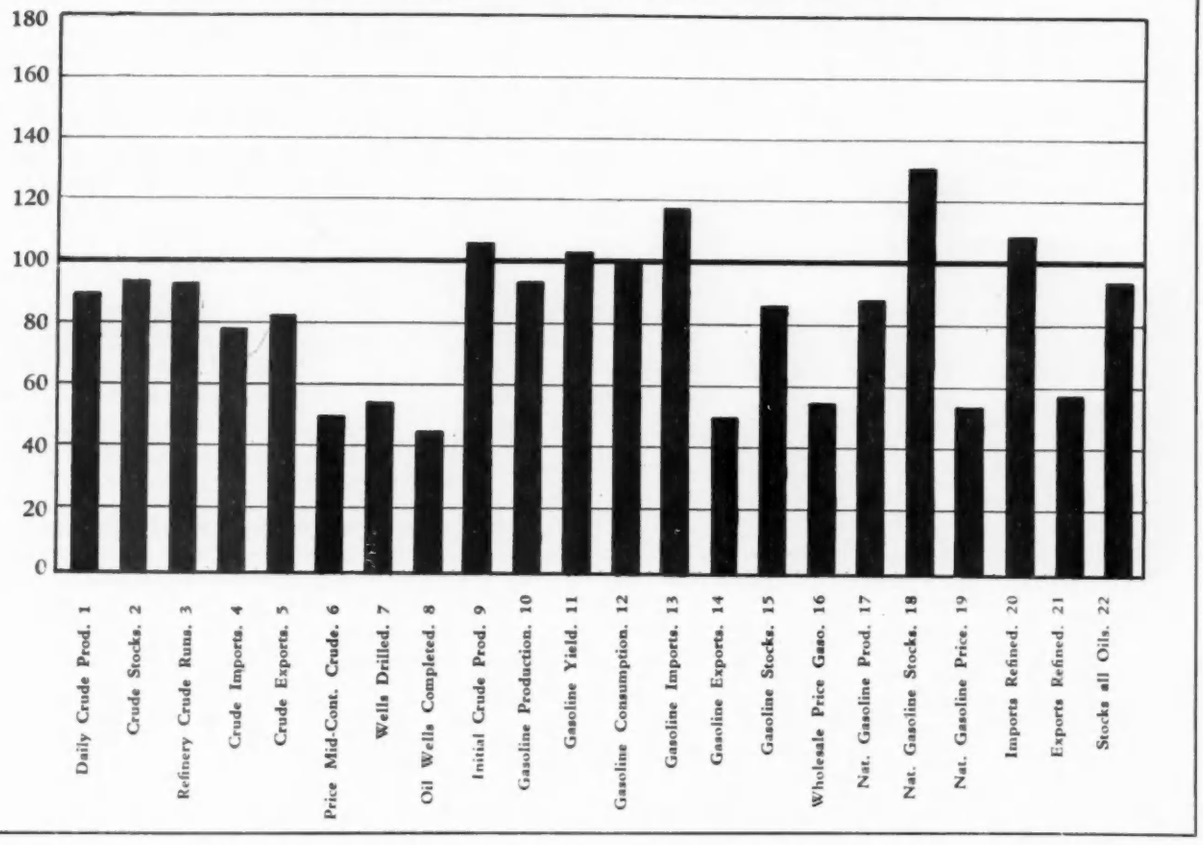
Sam Sklar has bought 17 miles of four-inch line from the Kettle Creek Refining Company at 20 cents per foot in the ground and plans to remove it from south Arkansas to East Texas.

Shell's Gray County Pipe Line Leased to Macmillan

Amarillo, Texas.—Macmillan Petroleum Corporation has leased Shell Petroleum Corporation's six-inch crude line extending from the Pampa field, Gray County, to Borger, and is now using the line to supply its 7000-barrel capacity refinery at Borger. Macmillan Petroleum Corporation is paying a daily rental for the use of this 50-mile system, and also purchases Shell Petroleum Corporation's allowable production at the posted price of major companies. The Borger plant formerly obtained Gray County crude on a common carrier basis via Bartex Pipe Line Company's system.

Houston.—Reports from A. H. Wheeler, operator of Wheeler 1, a wildcat test in Lee County, state that a recent test showed gas and live oil in the ditch coming from the present total depth of 3200 feet. The well is located six miles west and a little south of the town of Lexington. The identity of the formation has not been definitely established, although it is variously identified as Pecan Gap chalk or Taylor. Casing will be set sometime near the end of this week for another test.

Salient Oil Industry Factors for March, 1931, Expressed in Per Cent of March, 1930. Heavy Line (100) Represents March, 1930



Oil Industry Barometer—March, 1931

Index of Salient Factors—Current and Cumulative

		This Month			3 Months Ending Mar. 31		
	Factors—	Last Year	This Year	Index (a)	Last Year	This Year	Index (a)
1	Daily Average Crude Production (Thous. Bbls.)	77,600	69,397	89	231,564	196,033	85
2	Total Crude Stocks (Thous. Bbls.)	538,281	499,210	93	538,281	499,210	93
3	Refinery Crude Runs (Thous. Bbls.)	80,252	73,596	92	232,829	208,871	90
4	Crude Imports (Thous. Bbls.)	4,827	3,715	77	14,598	12,857	88
5	Crude Exports (Thous. Bbls.)	1,944	1,586	82	5,483	5,215	95
6	Posted Price 36 Gravity Mid-Cont. Crude (Per Bbl.)	$1.20	$ .59	49	$1.30(b)	$ .84(b)	65
7	Wells Drilled*	1,544	819	53	4,925	2,790	57
8	Oil Wells Completed*	794	347	44	2,817	1,214	43
9	Initial Crude Production (Thous. Bbls.)*	666	705	106	2,342	1,961	84
10	Gasoline Production (Thous. Bbls.)	37,727	35,246	93	108,330	99,282	92
11	Gasoline Yield—Average Per Cent of Crude (d)	41.79	42.94	103	41.18	42.25	103
12	Domestic Gasoline Consumption (Thous. Bbls)	31,029	31,037	100	83,050	84,014	101
13	Gasoline Imports (Thous. Bbls.)	1,369	1,607	117	3,401	3,671	108
14	Gasoline Exports (Thous. Bbls.)	6,057	2,946	49	16,703	11,455	69
15	Gasoline Stocks at Refineries (Thous. Bbls.)	55,239	48,255	87	55,239	48,225	87
16	Refinery Price U. S. Motor Gaso.—Group 3 (Cents)	6½	3½	54	6⅝	3⅞	58
17	Natural Gasoline Production (Thous. Bbls.)	4,576	4,048	88	13,234	11,819	89
18	Natural Gasoline Stocks (Thous. Bbls.)	673	884	131	673	884	131
19	Price Grade "A" Natural Gasoline, Group 3 (Cents)	5⅝	3	53	5½	3⅜	61
20	Imports of All Refined Oils (Thous. Bbls.)	3,713	4,065	109	10,743	10,583	99
21	Exports of All Refined Oils (Thous. Bbls.)	12,727	7,241	57	34,887	25,324	73
22	Total Stocks of All Oils (Thous. Bbls.)	700,681	656,237	94	700,681	656,237	94
	Weighted Index Supply	...	...	99	...	...	96
	Weighted Index Demand	...	...	79	...	...	87
	Weighted Index of Prices	...	...	52	...	...	61

*Exclusive of Rocky Mountains. (a)—Last Year—100.
(b)—Weighted Average. (c)—Monthly Average.
(d)—Straight run and cracked gasoline only.

Bottom-Hole Pressures in Oil Wells

(*Continued from page 32*)

ward the top of the well there is a tendency for the gradient to become steeper except in Curve C. It suggests that the place at which this change occurs may be the place where the flow changes from viscous to turbulent. The velocity at this point probably varies with the absolute gas-oil ratio, because it shows up on the low as well as the high velocity. These curves indicate that the flow of oil and gas mixtures through vertical pipes is probably more regular and the loss in pressure less than is generally considered.

Bottom-hole pressures have been taken in pumping wells under operating conditions by placing the gauge in a perforated anchor below the standing valve. The chart obtained in one of these wells is reproduced in Figure 6. This well had been shut down for over 24 hours at the time this chart started and the pressure recorded was 53 pounds, which is considered as the formation pressure. After pumping five hours the pressure decreased to 30 pounds, which is 66 per cent of the formation pressure (absolute). The pressure did not change during the rest of the period of the chart (33 hours). During this time production averaged 16 barrels per hour. Another well had a formation pressure of 69 pounds, and pumped 27½ barrels per hour, with a bottom-hole pressure of 56 pounds, which is 84 per cent of the formation pressure (absolute). It is probable that the amount of oil pumped from each of these wells was limited by the capacity of the pump as it is unlikely that the maximum amount of oil was delivered to either well with so low a differential pressure in the formation. A knowledge of bottom-hole pressures in pumping wells will give as much data for solving recovery problems as in flowing wells. It will also give information as to whether the rate of production obtained is limited by the capacity of the pump or by the capacity of the sand to deliver oil to the well.

Summary

Production control and lifting procedure can be more intelligently directed when bottom-hole pressures and pressures within the producing formation are known. By comparing these pressures the operator may determine whether the rate of production being obtained is limited by the capacity of the method of lifting the oil or by the capacity of the well to produce. The best size of flow string for a well flowing naturally or by gas-lift must be determined by the use of an estimated, calculated, or measured bottom-hole pressure, and the degree of accuracy is in proportion to the accuracy of the bottom-hole pressure upon which the calculation is based. Production control used to obtain more efficient use of the gas energy accompanying the oil, to retard bottom water invasion, or to obtain more effective natural water flood, is usually accomplished by regulating the pressure at the casinghead or changing the operating method. These are indirect methods because a change in the rate of production is a result of change in the bottom-hole pressure (more specifically a change in the differential pressure between the producing formation and the bottom of the hole) caused by a change of the casinghead pressure or method of operation. Reliable pressures at the bottom of oil wells and in the producing formation are essential in solving problems of lifting and recovery of oil.

Proper Methods of Completing Gas Wells

(*Continued from page 26*)

pany. In most of the wells in that area 20 per cent of the volume will be taken if 90 per cent of the rock pressure be held on the well during such take, as a back pressure or working pressure. This percentage does not hold true in all areas.

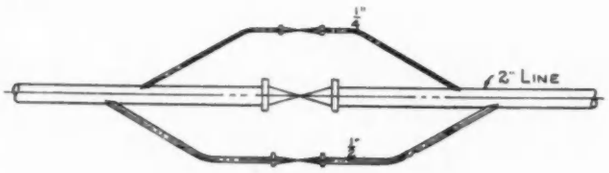


FIGURE 7
Christmas tree cutting device

3. **Bureau of Mines Method.** When it is possible to test wells directly into the pipe line this method measures, without wasting gas, the ability of the well to deliver gas under the exact conditions governing its sale from the producer to the pipe line company. This method, for the first time in the history of the gas business, is a measure of the well's ability to earn money for the producer, and of its ability to supply the pipe line. This is exactly the condition under which money changes hands and is that measure of a well most desired. This method of testing wells makes possible more accurate knowledge of the well's condition than has ever before been possible. I do not know how many things relating to well operation will eventually be shown by this method of testing. It does not fit well without the use of critical flow provers where several wells go through the same meter. So far it does not seem to be very practical in the case of smell wells nor in the case of extremely wet wells unless syphon or bleeder lines have been properly installed in them. As a usual thing the proper test of the smallest wells and of the extremely wet wells is not such an important factor anyway. The use of this method of testing wells in cases where it fits is strongly recommended.

Well Records

A most essential part of the work of every well is the graphic log made from these samples. Another important thing is that a steel line measurement be had and recorded at the point where the final string of casing is set. The record should show whether the casing was cemented or had a formation shut-off. If it was cemented it should show how much cement was used and what kind of cement. We now believe that it is important to have a steel line measurement on the total depth of each well. It is, of course, important to show the relative position in the producing sand of any breaks in the formation and a careful record of all the increases in gas found while drilling in the well. In general, it is impossible for the well record to be too complete, too correct, and too carefully made and kept. The well record is the pedigree to which many more things will be referred during the life of the well than the average man ever thinks about when the well is being drilled or the records being made. Proper well records carefully studied tell a lot about the future performance of the well, about the remedial work that will have to be done during its life, and about the ultimate recovery of gas that particular well may be reasonably expected to return to its owners.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, *Staff Representative, Tulsa, Oklahoma*

▼ ▼ ▼

Decreased Allowable Ratio Slows Ritz-Garret Drilling

Wichita.—On May 1, 44 wells in the Ritz-Garrett pool of McPherson County showed a unit potential of 54,615 barrels and the allowable production was set at 10 per cent of potential. New wells are coming in at the rate of two or more each week, resulting in a gradually decreasing percentage of allowable. Under the plan now in effect the potential of each new well is added as it comes in and the pipe line demand of approximately 6300 barrels daily allocated on a unit potential basis. During the period April 1 to May 1, total allotments were 192,040 barrels while pipe line runs totalled 190,585 barrels, or a shortage of 1455 barrels for the month. Percentages of allowable for the same period were as follows: April 1 to 20, 15 per cent; April 20 to 25, 13.5 per cent; April 25 to 28, 12.5 per cent; April 28 to May 1, 12 per cent. Plans are now under way to include the Decker pool under proration since recent completions have added materially to the total oil production of that structure although it is primarily a gas producer. With no further outlet in sight and the number of producing properties rapidly increasing, it is very likely that development will soon take a slump.

Dickey Oil Company and Shell Petroleum Corporation extended the Ritz pool two locations west when Eva Decker 1, SEc Section 35-19s-2w, came in at an estimated 200 barrels of oil per hour along with 8,000,000 cubic feet of gas from chat at 2933 to 2967 feet. Six-inch casing was set on top of the chat and first gas encountered when two feet in that formaion. First oil was encountered at 2946 feet. On the north end of the Decker pool, Derby Oil Company et al's Seay 2, CSE SW Section 2-19s-2w, was completed as a 20,000,000-foot gasser in chat at 2839 to 2950 feet. The area now holds the distinction of leading the state in production and in being the second largest gas producer. Addition of many more gas wells of the same caliber of several of the recent wells would rank it close to the Hugoton field which has an estimated gas potential of approximately 700,000,000 cubic feet daily with over 100 wells.

Quit Harvey County Test

Empire Oil & Gas Company and Shell Petroleum Corporation have abandoned Showalter 1, NW SE Section 23-23s-2w, three miles northeast of the town of Burrton in western Harvey County. Chat was encountered at 2983 to 3018 feet with a show of oil and a hole full of water at the latter depth. Six-inch casing was set at 3380 feet and a hole full of water found in siliceous lime at 3525 to 3556 feet.

Muth Brothers et al had top of the chat at 3430 feet in Freeman 1, SEc Section 4-21s-6w. When 30 feet in the hole filled with oil in seven hours and made one flow estimated at 35 barrels. Later it swabbed 175 barrels of oil and 75 barrels of water from a total depth of 3460 feet. The well is located about two miles west of production in southeastern Rice County.

Gilmore Oil Company's Sturn 1, NWc SW Section 31-17s-9w, in southwestern Ellsworth County, went into siliceous lime at 3243 feet and had a trace of water at 3267 to 3271 feet. From 3271 to 3281 feet it was making about five bailers of water per hour and at 3295 feet had a hole full of water. It is shut down for orders, which means it will be abandoned.

Danciger Oil & Refining Company's Weaver 1, SWc Section 3-2s-35w, resumed operations after several weeks shut down and is drilling below 3200 feet. This test, located in northwestern Rawlins County, is the most northerly drilling well in the Mid-Continent area and in a district about which nothing is known geologically except through geophysical survey which indicates an anticlinal condition.

Eastborough Pool

National Refining Company plugged back Murdock 3, SE SE Section 18-27s-2e, in the northern portion of the Eastborough pool, shutting off practically all of the water along with 200 barrels of the well's production. Before plugging operations were started it was making about 500 barrels of water which is now decreased to a show of water along with about 200 barrels of oil daily. In the early days of its development the pool had no restriction, resulting in a combined effort for maximum production and a rapid encroachment of water. With exception of a very few wells, all producers in the pool are making some water and a progressive repair campaign will probably be initiated in the near future. Derby Oil Company has a difficult fishing job at Rimel 1, NE NE Section 30-27s-2e, and may lose the hole.

Oklahoma City Production Hits New High for Week

Oklahoma City.—Daily average production and pipe line runs hit a new high in the Oklahoma City pool last week when 763 completed wells averaged 222,200 barrels and purchasers took an average of 185,000 barrels. These figures established new records both for total production and for total runs for any one week since discovery of the pool. In contrast, only two wells were completed and a relatively small number of new locations announced. Major companies, with few exceptions, are turning their attention largely to the matter of repair of old wells that are making excessive amounts of water. The report for the 24-hour period ending Saturday morning, May 9, shows that 105 sand wells produced 192,167 barrels, and 14 lime wells a total of 4454 barrels. Of the total of 763 wells that have been completed since December 4, 1928, 744 were in condition to flow, 15 were on gas lift, two were swabbing, and two were on the pump.

Champlin Refining Company and Hall & Briscoe completed Block 7, Central Addition, SE SE SE Section 3-11n-3w, flowing at the rate of 704 barrels hourly from 200 feet of Wilcox sand topped at 6240 feet. Gas was estimated at 60,000,000 cubic feet. Westgate Oil Company's Carey 1, SE NE SE Section 34-12n-3w, on the extreme north end of the pool, was opened for its second four-hour gauge

and proved its claim for gusher distinction by flowing 2252 barrels the first hour. It had been shut in since last week. At the end of the week five wells were waiting on cement to set on the last string of casing while three others had cemented the water string. Among the wells that should be completed are Indian Territory Illuminating Oil Company's Terrace Lawn 2, NW NE NE Section 10-11n-3w, an inside location; Anderson-Kerr's James 1, CN½ SW NW NW Section 10-11n-3w, on the west edge of production; Courtier Oil Company's White 1, SW SW SW NW Section 10-11n-3w, also on the west edge of production; Don Leon Oil Company's Burt 1, NW NW NW NW Section 10-11n-3w, beyond production on the west edge; and Simon and McGinnis' McGinnes 1, NE SE NW NW Section 10-11n-3w, in the same area. Sections 3-, 10-, and 15-11n-3w are running a close race in the number of new locations and starts. Recent check also shows that Section 3 has nine locations, rigs, and drilling wells spudded or setting surface pipe, Section 10 has eight, and Section 15 has seven Other new work is located principally in Section 2-11n-3w, and Sections 34- and 35-12n-3w. These sections encompass the present southwest and northwest limits of production and will probably be the scene of Oklahoma City's final development if geological calculations as to the probable limit of Wilcox are not in error. Phillips Petroleum Company and Shell Petroleum Corporation's Egermeier 1, SW SW SW Section 23-11n-3w, which is now digging pits, will be watched with interest, as it will be several locations west of production in the older portion of the pool.

Potawatomie County Try For Extension Is Failure

Seminole.—Threats of a new pool in the Seminole district were dissipated during the past week when Magnolia Petroleum Company made a Halliburton test in the Wilcox sand at 4445 to 4463 feet in Harris 1, NW NW SW Section 6-6n-4e, two miles north of the Asher pool in southern Pottawatomie County. The test revealed nothing but a scum of oil along with 250 feet of salt and sulphur water. Cores taken in the sand subsequent to testing were favorable and the well was structurally high enough to have produced.

Droppleman et al's Jones 1, SE SE NW Section 21-8n-3e, has been taken over by Amarada Petroleum Corporation who will test the Hunton at 4645 to 4775 feet. Cores from that formation have had a showing of oil.

Mid-Continent Petroleum Corporation's Lillis 1, NE NE SE Section 9-13n-6e, about eight miles southeast of the Davenport pool, topped the Woodford at 4010 feet. Hunton lime was cored from 4038 to 4055 feet with nothing showing. The well is reported to be running 50 feet structurally higher than Shell Petroleum Corporation's well in Section 23 of the same township, which had a show of oil along with an estimated 6,000,000 cubic feet of gas in the Hunton. Atlantic Oil Producing Company's Beebee 1, SW NE SW Section 8-13n-6e, is a location approximately one mile west of the Lillis test.

Oklahoma City.—Members of the Oklahoma City Geological Society devoted their Saturday luncheon period to the discussion of preliminary plans for entertainment of the American Association of Petroleum Geologists which will hold its convention in this city on March 17, 18 and 19, 1932. Selection of Oklahoma City as the next meeting place was made by the executive committee in its meeting held in Tulsa, Monday, May 4.

Prospects Good for Deeper Test In West Perry Area

Tulsa.—The area around Perry including the West Perry development is one of the most active of the smaller sectors. Magnolia Petroleum Company's Roberts 1, SE NE SE Section 21-21n-2w, in the West Perry pool, topped the Viola lime at 5178 feet and had a small showing of oil at 5265 feet. A hole full of water was encountered in Wilcox sand at 5273 to 5305 and it is being abandoned at the latter depth. The company has two wells drilling, Joe Young 2, SE SW NW Section 22-21n-2w, at 4375 feet, and Hoffman 1, SW SE SE Section 16-21n-2w, at 3368 feet. Both should be within striking distance of the pay zone within the next two weeks. Prairie Oil & Gas Company had a hole full of water at 4803 feet in Green 1, SE NE NW Secion 22-22n-1e, northeast of the town of Perry. It was plugged back to 4770 feet to test sands. There are rumors that owners of offset acreage may go together in financing additional drilling to test for Wilcox in the event that the upper sands do not prove of commercial value and Prairie Oil & Gas Company decides that it does not wish to carry the hole to that depth.

Magnolia Petroleum Company completed Waggoner 1, NW NW NE Section 18-14n-4e, in the West Chandler area, flowing 648 barrels the first 24 hours. Top of the Simpson formation was encountered at 4958 feet and first oil at 4961 feet. At 4964 feet it made 220 barrels in 10 hours and at the present total depth of 4968 feet it rounded out the 648 barrels. Coline Oil Company's Telford 2, SW NW SE Section 7-14n-4e, penetrated only five feet of the Simpson formation from 4982 to 4987 feet, and gauged 3913 barrels the first 24 hours. Oil tests 41 degrees.

Marshall County Tests Below Base of Trinity

Ardmore.—Periodically since 1909, when shallow production was first obtained in the Madill field, tests have been drilled below the base of the Cretaceous series in an attempt to trace surface structure into the pre-Cretaceous sediments. Little is known of the attitude of these underlying rocks since they are exposed in only one small patch in Marshall County and have been penetrated by only a few wells. For the past 22 years a high gravity, high gasoline content oil has been obtained from sands lying between 400 and 600 feet below the surface in the Madill area. Age of these sands is generally accepted as lower Trinity although there are evidences that they may belong in the Pennsylvanian. It may be safely said that the underlying rocks are an unknown quantity. In several wells widely scattered throughout the area sediments characteristic of the Glenn formation of Pennsylvanian age have been penetrated below the Trinity. Others have failed to find these beds and have gone into thick beds of blue and black shales, resembling the Caney shale, which normally underlies the Glenn formation and should be several hundred feet below the top of the Glenn. Looking at the general condition it may be inferred that a considerable period of erosion preceded deposition of the Trinity sands of lower Cretaceous, removing the entire Glenn series over some of the predominant structural features.

Two wells now drilling in the area have attained depths considerably below the base of the Trinity. D. H. Curry et al are drilling below 2160 feet in Elmer Ward 1, NW SW SE Section 15-5s-6e, approximately six miles northeast of the Madill field and between the Cumberland syncline and the Arbuckle Uplift. Industrial Oil & Gas Company's Sharp 1, NE SE NE Section 17-6s-5e, is drilling below 1200 feet.

News From California Fields

BRAD MILLS, ***Staff Representative, Los Angeles, California***

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Latest North Dome Well Good for 7500 Barrels

Coalinga, Calif.—Standard Oil Company of California has completed No. 7Q-21, Section 7-22-18, with an initial flow of 7500 barrels from 8091 feet, the latest North Dome completion at Kettleman Hills being located a considerable distance from nearest production. The oil is 37 gravity and the remarkable gas-oil ratio, which has prevailed since the discovery that the upper gas may be cemented off, exists in No. 7Q-21. The gas flow is estimated at only 5,000,000 cubic feet, or considerably less than was expected with such a large flow of oil. A string of nine-inch casing was cemented over the Temblor, but a 6⅝-inch combination string was landed on bottom and cemented through perforations at 7480 feet to shut off the upper gas.

The well is flowing through two one-inch beans and is being given a chance to establish a normal potential. The low gravity of the oil was expected and action of the well confirms the latest belief that Kettleman Hills will be a normal oil field after all. The low gas production also points to an actual shortage of gas for various outlets after the wells now producing from the top of the Temblor are killed and deepened. The uniformly low gas-oil ratio of completions in the lower Temblor indicates a rapid elimination of gas waste and development of a 50,000-barrel daily flow in short order.

Combined production of Petroleum Securities Company's Felix 1 and Felix 2, the former completed only a week ago, has increased to 11,500 barrels through a common trap arrangement. Felix 1 will soon be given a chance to produce through its own traps and production from the one well is expected to reach 15,000 barrels. Gas production of the two wells is remarkably low, not exceeding 15,000,000 cubic feet. This is in sharp contrast to the gas flow after the original completion of Felix 1 in the top of the Temblor formation. Felix 2 has a gas-oil ratio of 1:1000 and was producing more than 5000 barrels before sharing its trap arrangement with Felix 1. The latter was killed in the upper Temblor formation and deepened to 8110 feet to increase production and to eliminate the high gas waste.

All completions in the lower Temblor have had very low gas-oil ratios, and the combined action of these few wells points to a very large oil production. It is no longer a question of gas waste, but a problem to control production of oil. The North Dome has demonstrated that it is a normal oil field and not a freakish producer of only a very light oil and a large volume of gas.

Kettleman North Dome Association will soon finish Pacific Western 1P-2 as its first completion under the new arrangement. The well is being cored ahead in oil sand at 8250 feet, and not more than 100 feet more of hole will be made. A string of nine-inch casing was cemented over the Temblor formation at 6730 feet, but a combination string will be cemented through perforations below the final major shutoff to exclude the upper gas.

Other wells are drilling in the oil sand and should be completed within a few weeks. Shell Oil Company is coring oil sand at 8125 feet in Dixon 1, a test on the north flank which is expected to be a good producer. With a 9⅝-inch shutoff at 7260 feet, this well will have ample formation, even with the upper part shut off to reduce the flow of gas. Superior Oil Company continues to make record progress in Huffman 2, which is now being cored below 8100 feet. This well was started November 11, 1930, and has established a record for such a depth in this field.

Several wells will be completed during the early summer months and new locations on fee land and inside tracts are expected to offset the loss in field work through completions.

Ventura Avenue's Deep Well Discovery Causes Discussion

Ventura, California.—The probable effect of Associated Oil Company's recent deep completion in the Ventura Avenue field is being discussed, but the fact that the field is controlled by only two companies will act as a check on development. Both Shell Oil Company and Associated Oil Company have developed their holdings on a conservative basis, and discovery that the producing zone extends to the 9000-foot level will not cause these operators to change their plans. A large production between 7000 feet and 9000 feet, with no intervening water sands of any importance, is as attractive as shallower production from thinner formations. The depth is not the handicap it would have been a few years ago, drilling technique having improved to make a 9000-foot well an ordinary occurence.

Lloyd 57, which was completed 10 days ago with an initial flow of 5000 barrels from 8823 feet, has settled to 4500 barrels, but the cut is only three per cent as against an initial cut of eight per cent. This improvement indicates that the questionable streaks of sand cut below the final shutoff are not as dangerous as suspected. This well is producing from nearly 1700 feet of zone, with 9-inch casing cemented at 7139 feet. Associated Oil Company broke all California records with the completion of Lloyd 57.

Completion of several more shallower wells in the field during the past 10 days has brought the potential to the highest figure in months. Shell Oil Company finished three good wells at various depths, following completion of a series of smaller producers in the shallow zone between 4000 and 5000 feet. Taylor 59 was completed at 7125 feet with an initial flow of 2000 barrels; Taylor 65 was a 1000-barrel completion at 5783 feet, while Taylor 66 came in with an initial production of 2200 barrels at 5857 feet. The different levels at which these wells were completed show the remarkable thickness of the producing formation. When it is considered that the inside leases may produce from a depth of more than 9000 feet, a good conception of the structure may be gained.

Associated Oil Company is also completing some of its wells in the portion of the zone which has produced satisfactorily in the past, and has made no extended effort to

rush additional wells to the most recent record depth. Lloyd 104 was completed at 7182 feet and McGonigle 10 is being finished at 6875 feet. V. L. W. 15 has been drilled to 7839 feet and would normally be one of the deepest wells in the field.

Completion by Shell Oil Company of several shallow wells between 4000 and 5000 feet has added to the field potential and this level, which had been ignored for several years, holds considerable promise. Water from early completions supposedly damaged the shallow part of the formation, but a good production will be obtained above 5000 feet.

Plugging Back Unsatisfactory In Two Santa Fe Springs Wells

Los Angeles.—Recompletion of a few wells at Santa Fe Springs is of little importance, but plugging back from the deeper to the shallower zones is an interesting departure from the usual procedure in fields where the tendency is to go deeper, rather than shallower for new production.

General Petroleum Corporation plugged back two wells to improve the potential, but the practice failed to cause a spectacular improvement. One well was plugged back to 7155 feet from 8000 feet, but produced only 75 barrels after recompletion. Another was plugged back to the Meyer zone at 4600 feet from 7870 feet and was placed on the pump with a new initial production of 225 barrels.

Union Oil Company's Bell 33, recompleted 10 days ago in the lower Nordstrum zone, is flowing 1350 barrels with the aid of gas. This zone normally has a high fluid level and adapts itself readily to assistance from compressors.

If the demand for light oil improves, many wells will be worked over and recompleted in the shallower zones.

California Operators Vote to Continue Membership Drive

Long Beach, Calif.—More than 250 operators, representing every field in California, met here may 8 in response to a call by Oil Producers Sales Agency, and a majority voted to continue the drive for memberships until there can be no doubt as to the disposition of oil produced by independents up to the allowable set by the proper organizations. The purpose of the organization was explained fully and operators were assured that they can lose nothing by joining the movement.

Neil H. Anderson, umpire for Long Beach, presided and introduced Ralph Lloyd, president of the agency. Lloyd reviewed reasons for forming the organization and explained that the average California operator has come to the realization that the former method of selling crude oil is unsound.

Judge William Hazlett, attorney for the organization, interpreted the legal phases of the agency and said that it was undoubtedly within the law to find a market outlet for oil disposed of collectively to best advantage.

It was revealed during the meeting that in case a member deliberately violates certain provisions of the by-laws, he may be required to pay, as damages, $10 per barrel for all oil produced during the 30 days preceding issuance of the order violated.

More than 75 per cent of the allowable production of the independent producers has been pledged, the total allowable of the smaller operator totaling about 48 per cent of the state allowable.

North Belridge's Second Well In Temblor Is Disappointing

Bakersfield, California.—Union Oil Company's Belridge 17, second producer in the Temblor formation at North Belridge, has settled to 240 barrels and is far from the well that was expected. After drilling to 5601 feet, a flow of salt water was developed and the hole was plugged back to 5540 feet, the point at which the well was tested prior to deepening. The oil is 40.2 gravity and shows a negligible cut.

Successful placing of a plug is regarded as an unusual mechanical achievement, since most wells never produce clean oil after developing a large flow of salt water.

Standard Oil Company is reaming at 5450 feet in McPhail 2, the hard gray sand showing oil and gas. Associated Oil Company's Reward 1 should be completed within a month. This well was drilled to 5000 feet and a string of 11¾ inch casing cemented at 4998 feet. The location of this well seems to be almost as good as the discovery well, running only eight feet lower on the structure. The producing trend appears to bear toward the west from the surface axis, but limited drilling in this section has not been sufficient to establish this theory. It is known that the structure will be a narrow one, the Temblor formation probably underlying a narrower strip than the shallow zone.

Bakersfield, Calif. — General Petroleum Corporation is gradually drilling through the water formations which caused trouble in earlier deep tests in the Lost Hills field, but the loss of mud indicates that progress will be slow for some time in No. 1301, the company's first deep well. The formation is taking the fluid at a rapid rate, present depth being 2625 feet.

George F. Getty is considering running another string of casing in Lincoln 1A, which failed to produce on a recent test above 4000 feet. A fair oil sand was cored between 3840 feet and bottom at 3940 feet, but the formation immediately below the 6⅝-inch shutoff at 3768 feet was questionable and took fluid readily. A smaller string of casing may be run to shut off the formations between the shoe of the last string and the top of the best oil sand, if a suitable body of shale can be found.

Universal Consolidated Oil Company has made another location in the field, following an unsuccessful venture of Section 32-26-21. The new location is on Section 30-26-21 and nearer the top of the structure than the first test.

Bakersfield, Calif.—The settled fields of Kern County were expected to show a slightly increased activity, following the posting of a much better price for heavy oil than for the very light grades. This increase in field operations did not materialize, however, since it is possible to increase production by merely opening up shut-in wells, rather than through outright drilling. Such fields as Maricopa Flat, Kern Front, Fruitvale, Midway-Sunset, Mt. Poso and Round Mountain are very quiet and all are capable of producing much more oil than is now being marketed.

The higher prices for heavy oil are attractive, but this type of producer should have the advantage occasionally, as he has received a very low flat price for years. The present price looks attractive in the face of conditions, but there is no particular object in drilling more wells at this time.

Townlot Activity Is Past In Playa del Rey District

Los Angeles.—Townlot activity at Playa del Rey is definitely past, as far as the upper zone is concerned, but development of the larger leases in the lower zone should support about the present number of projects during the summer. About 25 wells are active, and of this number the majority will be carried to the deep zone.

Birch-Royer Oil Company drilled to 6428 feet in Lovell 1, a deep test near Fifty-Third Place and Speedway Avenue, and found the schist after tapping the top of the conglorerate at 5900 feet. This is the second deepest well stratigraphically in the field. A string of 6⅝ inch casing was cemented at 5740 feet and the test will include a good body of zone.

Union Oil Company has cemented a string of 8⅝ inch casing at 5830 feet in Vidor 1, an extension test in the southeast part of the field and showings make the well look promising for such a location.

Only a few wells are active in the townlot sector and no new locations are being made.

Ohio Oil Company, which controls the second largest block in the field, will drill only the necessary offsets. This company discovered the field but the first well proved to be located on the north flank of the structure.

Tideland Activity Declines As Light Oil Demand Slumps

Santa Barbara, Calif.—Tideland activity, which threatened to change the producing map of a part of California, has declined as demands for light oil slumped, but the proven and semi-proven acreage which lies outside the mean high tide line along the Pacific Ocean holds wide possibilities.

Production at Elwood was doubled by wells out in the ocean, but the wave of pier activity finally subsided and drilling halted in time to prevent a more rapid drainage of the field.

Activity at Rincon was threatened, but the reputation of the mainland leases was so bad that operators were reluctant to build long piers for ocean tests. General Petroleum Corporation built one of the longest piers every used for ocean drilling, but production from the first well was not high.

Carpenteria, Coal Oil Point and Capitan are expected to be the scene of ocean drilling when conditions improve.

Small Producer Extends Torrance Field to East

Los Angeles.—Pacific Coast Petroleum Company and Olympic Oil and Refining Company have succeeded in making a commercial producer of Watson 1, which may be considered an extension to the Torrance field. The well is located on Section 29-4-13 and is east of the present producing limits of the field. The oil is 20 gravity and shows a small cut. The well was drilled to 3698 feet and swabbed for some time, but failed to flow naturally. When placed on the pump, the well produced at the rate of 300 barrels.

Development of production outside the proven limits of the field may mean either a natural extension of the main Torrance field or a minor "high" after the plunge toward the east. The former is the most logical reason for the discovery. Several locations have been made and limited activity is expected. It is not reasonable to suppose that a large production will be developed, since the main part of the field has long since ceased to be spectacular.

Even a favorable extension should not be expected to yield large flowing wells. The fact that production will be found at a shallow depth and the present good price for heavy crude will be factors favoring additional development.

Oil Equipment Export Group Hold First Monthly Meeting

Los Angeles—The first general meeting of the recently formed Oil Equipment Export Association will be held at the Alexandria Hotel in Los Angeles, May 21 at 6:15 p. m., with W. R. Martin, president of the association, presiding.

The featured speaker will be Clarence T. Matson, manager of the foreign department of the Los Angeles Chamber of Commerce, and he will be followed by a number of oil men from foreign fields who will make short talks along lines that will be of special interest to the manufacturers of equipment. It will be the policy at the monthly export meetings to have as special guests the various oil men visiting in California from foreign fields. It is now expected that between 10 and 15 foreign oil men will attend the first meeting.

C. Homer Spotts is chairman of the program committee and he is being assisted by John Grant and E. H. Adams, and a special musical program made up of Mexican music number has been arranged. The new constitution and bylaws will be approved at this meeting.

It is probable that all general monthly meetings will be held on the third Thursday night each month.

Huntington Beach, Calif.—W. E. McCaslin is drilling deeper in No. 17, Huntington Beach deep test, following sidetracking of iron at 7660 feet, but as little hole as possible will be made to recondition the well. With a string of 4¼-inch casing at 6900 feet, operations have been slow. This well was recently swabbed, but failed to flow and the status of the deep zone remains unchanged.

Superior Oil Company is rushing two more wells to the deep zone, having passed 6900 feet in one and 6500 feet in another. This company's original deep well has been idle at 7491 feet for several months, but no production test was made after landing a string of 4¼-inch casing on bottom. Oil sand was cored below 7000 feet in this well, but there is no definite assurance that a commercial well will be completed.

Several locations have been made and completion of a good well in the new deep zone would lead to extensive drilling.

Ventura, Calif.—Chanslor-Canfield Midway Oil Company has a new world depth record in Hobson A2, a wildcat test two miles east of the Rincon field, having drilled past 9850 feet. The formation continues to run to a tough shale and little difficulty is expected in making more hole. The depth of Hobson A2 exceeds that of Standard Oil Company's Mascot 1, in the Midway district. Only Shell Oil Company's Williams 1, a wildcat in the Semitropic district, has been drilled to 9700 feet. Hobson A2 is located in a very rugged section flanking the Pacific Ocean and still has a chance at production below the present depth. A small production was developed on the compressor at 7479 feet, but the flow was not commercial for such a depth. Continental Oil Company is drilling an offset to Hobson A2, but has reached a depth of only 3300 feet.

New Mexico and Rocky Mountain Area

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Ohio Oil Sells Dry Creek Gas Line to Montana Power Company

Billings, Montana.—Announcement was made here this week to the effect that Ohio Oil Company had sold its gas pipe line from the Dry Creek field, southern Montana, to Montana Power Company (Anaconda interests), and thus settled what promised to be a battle of the giants for control of gas distribution in southern Montana cities and towns. Montana Power Company planned to lay gas into Anaconda, Butte, and Helena from the Cabin Creek field in northern Montana, and Ohio Oil Company was already at work bringing gas in from its almost inexhaustible supplies in northern Wyoming and southern Montana.

The transaction just completed includes the franchise in several towns along Ohio Oil Company's right-of-way and the uncompleted line and distributing systems in the communities involved. Material already purchased will be taken over by Montana Power Company, and that company will buy its gas supply from Ohio Oil Company.

Bozeman will now become a part of the major system planned by Montana Power Company to supply cities in the southwestern part of the sttae. The plan for developing an additional supply of gas in the Cut Bank district is to be carried out this summer, but the acquisition of an immediate and adequate supply near at hand will facilitate the delivery of fuel to all communities before autumn.

Badger Basin Test Deepest In Rocky Mountain District

Billings, Montana.—The deepest well ever drilling in the Rocky Mountain states is making slow progress on the Badger Basin structure in Park County, northwestern Wyoming. Total depth at last report was 8510 feet, and inasmuch as the well heads up and flows every 12 hours, drilling is necessarily slow. The work is being done with cable tools. Formation is the second Frontier sand and it is hoped to increase the production materially by penetrating this another 30 or 40 feet.

Casper, Wyo.—Producers & Refiners Corporation has been notified by the mineral leasing division of the United States Geological Survey that effective March 1, 1931, it is expected that it will withdraw 65 per cent of its gas in the Sand Draw field from government-owned leases, and that the balance shall come from patented lands. Government officials state that this would be about the proper percentage of gas belonging to federal leases in proportion to the entire field. Riverton Petroleum Company, owning land in the field, will protest the ruling on the ground that much of the area included in the government map is potential, and not proved acreage. Riverton Petroleum Company claims that the ruling is discriminatory. A unit operation in the field may be the ultimate outcome of the matter.

Rawlins, Wyo.—Midwest Refining Company has resumed operations at its wildcat well on the Elk Mountain structure, in Carbon County, southern Wyoming. It has been shut down for the winter at 1810 feet. No showings worthwhile have been reported to date.

Unit Operation of Piceance Creek Structure Is Approved

Denver, Colorado.—Federal and state officials of Colorado have approved the plan for unitized operation of the Piceance Creek structure in Rio Blanco County, Colorado. All interests holding leases and royalties on the structure have agreed to an operating contract whereby Magnolia Petroleum Company will be in charge of the development of the structure. There are more than 100 parties to the contract.

A test well started by Argo Oil Company and completed by White Eagle Oil & Refining Company, developed an open-flow of about 2,000,000 feet of gas in one of the upper horizons. This was deepened to 5130 feet, and then plugged back to the gas sand.

Magnolia Petroleum Company is now moving in equipment for a second test on the structure, the location to be one-half mile east of the first test.

Big Timber, Montana.—Shoshone Consolidated Oil Company is preparing to resume operations at 5700 feet in its test on the Hamilton Coulee structure, near Big Timber. Work of assembling material and drillers is being directed at location by the president of the company, I. A. Kriner. The company hopes to develop a commercial production of natural gas to supply this town and community with fuel. The well is the deepest ever drilled in Montana.

Rock Springs, Wyo.—First discovery of oil in this territory, which has hitherto been proved only for large gas production, came with the discovery by Mountain Fuel Supply Company (Ohio Oil Company) of a very good showing of free oil in its George Cappers 2, in the North Baxter Basin gas field near here. Well has flowed by heads after having been shot, and although no gauge was made of this production it is evident that it is materially improved from the original three-barrel per day production which came along with 1,000,000 feet of gas. Gas production, also, is greater, though no report of actual gauge was made by the company. Total depth of the well is 3630 feet in the Sundance formation.

Casper, Wyoming.—Wyalta Oil Company is repairing its leaky wells on the Spindletop structure, 25 miles southwest of Casper. Wells were drilled three years ago by Spindletop Syndicate, sold to Wyalta Oil Company, and, then shut down. The number 1 well was placed on production after it had been repaired; it produced 60 barrels per day for several days. This is considered a very good average for this field.

Casper, Wyo.—The Bureau of Yards and Docks, Navy Department, Washington, D. C., has rejected all of the bids opened in Casper April 22 for the repairs of shut-in wells at Naval Petroleum Reserve No. 3 (Teapot Dome), and new bids are to be invited for opening under revised specifications in Casper on May 20.

East Central Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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Gladewater Section of Longview Field Assured Good Completions

Longview, Texas.—The Gladewater section of the Longview field is now assured of a liberal share of the prolific oil area as result of the Texas Pacific Coal & Oil Company's Fee 1 having cored 10 feet of highly saturated oil sand at 3564-74 feet followed by volcanic ash to 3582 feet. This outpost test is about 2¾ miles northeast of Selby Oil & Gas Company's big producer on the Snavely land, and on a line between the latter and Upshur County's lone oil producer.

Texas Pacific Coal & Oil Company reports that the top of the sand was encountered at 3203 feet below sea-level, or more than 100 feet above the accepted water level of the field. Casing has been cemented above the sand, with completion scheduled to take place later in the week. The company acquired in fee the 182-acre tract on which this test was drilled more than 20 years ago to obtain timber to use as fuel in operating its mines at Thurber, Texas, but the discovery of oil at Desdemona supplanted this fuel source. The above test was drilled in the southwest corner of the G. Hampton Survey. A tank car rack and gathering line will probably be built by the company to deliver the oil to its refinery at Fort Worth.

Longview field was credited with 15 tests cementing casing on top of the Woodbine sand at the start of the present week, and all of these are scheduled to be completed prior to the start of the new proration period on May 16. All wells completed between periods are supposed to be restricted to 100 barrels daily until the start of a new period. Arkansas Fuel Oil Company and Yount-Lee Oil Company are the two most active concerns in this field, with six operations underway each. The latter is completing negotiations for participation in a direct pipe line project to the Gulf Coast, and in the meantime is selling its current production to Arkansas Fuel Oil Company at the wells for 47½ cents per barrel.

East Texas Proven Area Is Assured 1000 Wells

Tyler, Texas.—Sufficient field operations are now underway in the proven oil area of East Texas to assure 1000 oil wells, as the district has about 400 completed producers, and Rusk and Gregg Counties combined started the current week off with a total of 458 operations that will score a high percentage of successful completions. Field work in Smith and Upshur Counties swells the total producing wells and drilling and authorized tests to more than 1000.

Proration is believed to have stimulated drilling operations in the district lately, as it is a distinct advantage for lease owners to have every 20 or 40-acre unit, according to which section in which located, fortified with one producer in order to share equally in the production allowance. Lease owners that lag behind in developing all their units will lose out on production to those that proceed with developing as great a potential and on as many separate units as possible. Should proration be abandoned as result of the many attacks being made by operators in district and federal courts against the Texas Railroad Commission there would be a tendency to withhold drilling of all unnecessary locations in order to protect completed wells from unfair drainage.

A dozen, more or less, new companies and operators make their appearance for the first time in the district on each weekly drilling report, and virtually every important oil field in the United States and Canada is represented by one or more companies and operators on current production and drilling reports. The so-called "shoestring" type of operator is having his full share of the activity, owing to the comparative ease that small drilling sites and tests can be promoted. Scores of tests have been completed or started by agreeing to pay idle drilling contractors from oil produced for actual drilling of the holes. About 50 cents per foot more is given as a bonus on such deals.

East Texas Operations

Expansion of field work in Rusk and Gregg Counties since the area reached important proportions is illustrated by the table below, showing operations on given dates:

Date—	Locations	Derricks and Rigs	Active Tests	Totals
February 9	10	34	34	83
February 16	21	48	54	123
February 23	23	71	70	164
March 2	22	97	84	203
March 9	21	129	104	254
March 16	21	128	136	285
March 23	27	136	194	357
March 30	22	141	222	385
April 6	24	134	231	389
April 13	40	154	223	417
April 20	49	155	231	435
April 27	56	135	259	450
May 4	59	143	240	442
May 11	54	158	246	458

Harrison County, East Texas Test Is at Interesting Stage

Shreveport.—Six-inch casing was cemented at 2797 feet where Blossom sand was topped, during the week ending May 9, in Banner and associates' Lowrey 1, W. O. Stanfield Survey, southwest Harrison County, East Texas, and preparations were being made Saturday, May 9, to drill plug; total depth is 2805 feet still in the sand. Elevation is 312 feet. The sand showed an oil saturation.

Sloan Prospecting Company is ready to set 6⅝-inch casing with 30 feet of screen, in Windham 1, A. H. English Survey, Shelby County, East Texas, where a 17-foot core, 16 feet of it sand showing oil, was taken from 2652 to 2669 feet, elevation being 307 feet. Plans to make a drill stem test were changed during the past week. On Saturday, May 9, all but one truck load of the casing was on the location.

Everett Production Company plans to set a string of 6⅝-inch casing in McDaniel 4, Alamson Barr Survey, south Panola County, after encountering 30 feet of a broken formation from 1285 to 1315 feet. The third shallow hole on the same lease was abandoned as dry at 410 feet. The first hole at 398 feet blew out making fro 2,000,000 to 5,000,000 cubic feet of gas, formed a 25-foot crater and caught fire

but was later killed. The second hole to about the same depth was dry.

Panola County secured another wildcat test during the past week, Hopper and associates making location for Cameron 1, W. A. LaGrons Survey, six miles east of Carthage, the county seat, on a 4000-acre block.

Shelby County which now has six active drilling operations, one test shut down, one rig and two derricks added two more tests during the week, derricks being up for both. These are Joiner and associates' Foster and Billingsley 1, J. Bowlin Survey, and Schultz and associates' Hughes 1, J. Clay Survey. Rig is going in for the latter test.

Sun and Yount-Lee to Build East Texas-to-Beaumont Line

Beaumont, Texas.—Construction of a 10-inch welded crude oil line from East Texas to Beaumont, a distance of about 175 miles, was authorized here May 11 by officials of Sun Oil Company and Yount-Lee Oil Company. These two concerns will finance the line on a 50-50 basis, but operation will be by Sun Pipe Line Company, a subsidiary of Sun Oil Company, with an established system in the Gulf Coast region, and tank farm and tanker terminals at Sun station, near Beaumont.

Extensive holdings held by the two companies sponsoring this pipe line project, which is the ninth separate trunk line outlet for East Texas are sufficient to support a private transportation outlet to the coast. Sun Oil Company is credited with having about 10,000 acres of proven and partially proven leases in East Texas, while Yount-Lee Oil Company has about 2300 acres of proven leases. The latter engages in the crude oil marketing business on a large scale from its Beaumont tank farm and tanker terminal, but has no refineries, and will make crude committments from its East Texas properties over a long period.

Awarding of contracts for construction of the line was scheduled to take place May 13, with provisions made for contractors to average five miles of completed line daily; thus it is possible that this new line will be in service by the time the trial proration period in East Texas expires at the close of June. The pipe line route to Beaumont will follow Gulf Pipe Line Company's system most of the way. R. R. Pack, vice-president and general manager of Sun Pipe Line Company, with offices in the San Jacinto building here, will be directly in charge of the new pipe line project.

Nacogdoches County Scene of Active Wildcatting Campaign

Houston.—The frantic scramble to discover new production in the East Texas fields and to extend the present producing areas has lent considerable impetus to the leasing and wildcat movement in Nacogdoches County. Leasing companies and operators have been at work for some time with the result that there are now 12 wildcat wells being drilled in the county outside of the shallow field in the Chireno district, which has been producing oil for over 40 years.

The fact that a part of the county lies along a flank of the Sabine Uplift has been sufficient reason to inspire the confidence displayed in leasing and in the numerous tests which are being drilled. A block of 4500 acres in the Holly Springs district, 14 miles north of Nacogdoches, was recently lease for $1.00 (one dollar) an acre. Carolyn Oil Company plans to put down a test in this block within the next six weeks. A second block of 7638 acres has been leased at the same price by L. E. Trout of Oklahoma City, an independent operator. This block is located four miles east of Appleby, in the Pisgah block. A 4000-foot test will be drilled on this block by G. C. Dixon. The test will be spudded in about June 1.

Feverish operations on several of the tests are evidence of the fact that the operators are not considering an attempt to produce oil from the shallow level but will attempt to locate production in the Woodbine. Benedum & Trees passed up a good show of oil from 550-580 feet in Conkrite 1, in the Chireno Survey, and are now drilling in shale at 2310 feet. W. W. Wheeler's Parmalee 1, located in the John Kirby Survey, claimed a show of gas at 1500 feet but passed up the show and drilled to 2006 feet before it was temporarily shut down.

A shallow sand, entirely different from the one that has been found in the Chireno field, has been discovered in Driver 1, of Beach, Scully and Harwell in the Patricia de Torres Survey. This sand was encountered at 375 feet, while the sand in the Chireno field has been penetrated at 750-780 feet. Surface casing was set in this well at 100 feet. A test is being made of the sand to determine the value of the discovery, but it is likely that the test will be drilled deeper in an effort to strike a more prolific sand. John Starks et al's Langford 1 in the Seth Cason Survey is drilling at 3860 feet in chalk. No show has been recorded for this test.

Several other wells have made location in the county and are rigging up to be spudded in within a short time. C. M. Bowie's Miller 1, in the Stephen Strode Survey, has set eight-inch casing at 675 feet. Fain & McGehee's Pirtle 1, in the James Edward Survey, is still a location. Matthew Foreman's Mattaeur 1, in the Chireno Survey and E. L. Chapman-Tilford's Hunt 1, in the Bennett Survey, in the northwest part of the county, are both derricks. Other operations that are being rigged up preparatory to being spudded are Sequoia Oil Company's Elza Boyd Estate 1, Alford Oliver Survey; Joiner and Henson's Andy Legg 1, John Durst Survey, in the southwest part of the county; J. C. McNeal's Hayter 1, in the de los Santos Coy Survey; and Joiner et al's Reeves 1, in the Lloyd Survey.

East Texas Area Magnolia's Largest Crude Supply Source

Dallas, Texas. — The Kilgore-Longview section of the East Texas district has become the largest single source of crude supply for Magnolia Petroleum Company, and during April a total of 654,993 barrels, or an average of 21,833 barrels daily for the month was handled from this area by Magnolia Pipe Line Company. Heavy runs from this prolific area largely accounted for the increase in Magnolia Pipe Line Company's daily average crude runs from fields in Texas, Oklahoma, Louisiana and Arkansas, from 77,910 barrels in March to 99,340 barrels in April. The latter figures do not include oil handled for other concerns on a common carrier basis.

Withdrawals from steel storage in Oklahoma were made by Magnolia Petroleum Company at average rate of 5218 barrels daily even though its takings from all fields registered an increase of 21,430 barrels daily average during April. However stocks were added too in Oklahoma at average rate of 7370 barrels daily in March and 9998 barrels daily average in February. At the close of April the company reported a total of 6,167,201 barrels of crude in storage in Oklahoma tank farms.

Observing Proration Helps Kilgore Water Situation

Tyler, Texas.—Salt water situation in the Kilgore field registered little change during the past week as result of most of the leases having adhered to proration restrictions more or less. Previous outbreaks of water trouble have served as a warning to operators against deep penetration of the sand horizon.

Magnolia Petroleum Company's Folrey 1, which was the first well in the field to go to water, plugged back with cement to 3608 feet then redrilled to 3647 feet or 14 feet above the old total depth. It flowed 145 barrels of fluid, 20 per cent water, during the first 15 minutes after working over, and after being pinched to 40 barrels per hour over night the amount of cut oil dropped to less than one per cent.

C. C. Julian Oil & Royalty Company's England 1, located near Kilgore, was completed flowing 300 barrels of oil during the first 45 minutes open from 19 feet of sand followed by broken sand and shale at 3546 to 3561 feet. Pat Hudson-Geo. McCamey et al's S. Smith 1, located more than one mile west of the town, flowed 210 barrels on 10 minute open flow gauge from sand at 3558 to 3612 feet.

On the southeast end of the Kilgore field and northeast of Overton, the outpost test of Turner and Swift on the Sanders land flowed 126 barrels on 30-minute open flow gauge, with a total depth of 3772 feet.

East Texas Production

Daily average production of the Joiner-Kilgore district and the Longview field is shown below, with total number of production wells included:

	JOINER-KILGORE		LONGVIEW	
Week Ending—	No. Wells	Daily Average Production	No. Wells	Daily Average Production
February 18	22	19,090	1	6,511
February 25	24	24,954	1	7,044
March 4	39	51,475	1	4,578
March 11	50	75,170	1	7,170
March 18	64	75,540	5	14,021
March 25	81	104,345	6	17,769
April 1	115	119,500	11	24,990
April 8	159	165,250	16	26,000
April 15	198	210,208	25	38,180
April 22	234	239,515	30	58,480
April 29	298	271,070	39	68,715
May 9	343	216,650	46	25,250

Race for Producing Well In Nacogdoches County

Houston.—Competition in the race for the $10,000 bonus to be paid for the first 1000-barrel well to be brought in in Nacogdoches County, has been reduced by one well with the abandonment during the early part of the past week of John Starks et al's Langford 1 at 3879 feet. This well is located 1848 feet from the east line and 1056 feet from the north line of the Seth Cason Survey, in the center of the 140-acre tract.

Three wells in the county can be considered approaching a possible producing depth. Benedum Trees' Conkrite 1, Chireno Survey, is drilling in chalk at 3250 feet. W. W. Wheeler's Parmalee 1, eight miles northwest of Nacogdoches, in the John Kirby Survey, is coring at 3200 feet. A slight oil and gas show was encountered in this test at 2900 feet. E. L. Chapman-Tilford's Hunt 1 in the Bennett Survey, 16 miles northwest of Nacogdoches, is drilling at 3500 feet.

Pipe for Sinclair-Texas Line Being Unloaded at Arp, Texas

Henderson, Texas.—Pipe was being unloaded from cars on the International-Great Northern railroad at Arp and Troup early this week for use on construction of Sinclair-Texas Pipe Line Company's 12-inch trunk line system which will convey crude oil from the new East Texas field via Boggy Creek to a connection with Pure Oil Pipe Line Company's Mid-Continent to Gulf Coast trunk line at a point near Teague, Freestone County. To handle materials in connection with construction of the pipe line and also in drilling operations in southeastern Smith County, the Sinclair interests are also engaged at present in construction of a materials spur track on the above named railroad about mid-way between Troup and Arp.

Pipe for laying an extension of the line of Sinclair-Texas Pipe Line Company from its pump station site, southeastern Smith County, toward the north for gathering oil from the Longview and Kilgore areas as well as the Joiner district, is scheduled to arrive at Overton the latter part of this week and the early part of next week.

The pipe which is being shipped from Eastern mills for use in building Sinclair-Texas Pipe Line Company's carrier, is being barged down the Mississippi River to Memphis, from which point it is being sent out over the International-Great Northern railroad at the rate of 11 cars daily.

Commission Rules on Safety Against Fire in East Texas

Austin, Texas.—In an effort to prevent another serious fire such as the one which has already occurred in East Texas and to conserve natural resources of the state, the railroad commission has issued a special order regulating operations in the East Texas field.

Similar rules are inforced in other fields of the state, but due to congested drilling conditions, inexperienced, and in some instances reckless operators, it was thought necessary to issue these rules in addition to the general rules of the commission. The regulations follow:

1. The producing string of casing in each case must be cemented by the pump and plug method.

2. After setting and cementing of the producing string, and before drilling operations are resumed, a blowout preventer in good condition and working order must be placed on the well, and in no event shall the cement plug be drilled out or pay formation cored or drilled into until such blowout preventer has been properly connected.

3. Drilling of the pay formation must be done slowly and carefully, and operators are hereby ordered to refrain from drilling the maximum amount of pay and hereafter drilling operations in every well must be stopped at a safe distance above the water level shown by the geology of the area in which the well is located.

4. The use of casinghead gas for fuel and other purposes besides gas lift, is encouraged, but it is hereby ordered that all casinghead gas which cannot be utilized in accordance with the conservation law and rules and regulations of the Railroad Commission of Texas, be piped to a safe distance from the tank batteries, wells and buildings, and burned. This shall apply to gas from tanks as well as separators, and in the burning of such gas, risers must be used in order to keep the fire at a safe distance above the ground.

EAST TEXAS HIGHLIGHTS

By H. H. KING
Staff Representative

Adopt Gravity Price Schedule

Thinning of ranks of the companies paying the Mid-Continent gravity scale price for East Texas crude during the past week has caused the few remaining companies adhering to the high price schedule to become discouraged in their efforts. It is quite likely that the Mid-Continent schedule will be substituted shortly for a flat price more in line with that being paid by other important buyers, with 40 cents the most likely figure. A price range of 17 to 67 cents per barrel at the well now prevails on East Texas crude testing from 37 to 40 gravity. The lowest prices involve production in the Joiner area, where independents predominate as producers and connections have been the most difficult to obtain because of transportation congestion.

Proration Vialators

More than 15 separate companies and operators in the Joiner, Kilgore and Longview fields were producing more oil than authorized under proration rules late last week. The former two fields were credited with an equal number of violators. When indirectly threatened with court action some of these well owners filed petitions over the week-end for injunctions to restrain the Texas Railroad Commission from enforcing its rules pertaining to proration.

Salt Water Disposal

Organization of a salt water and waste oil disposal company, with separate units in each of the three areas comprising East Texas, has been undertaken by some of the larger operators. An epidemic of costly damage suits are almost certain to follow in the wake of the present policy of handling waste oil and salt water, as the natural drainage from the Longview, Kilgore and Joiner fields leads to the Sabine, Angelina and Neches Rivers, which are in turn the only water supply for hundreds of towns between the fields and the Coast. Powell Salt Water Company, which has been functioning successfully in the Corsicana-Powell field, is to be the nucleus for the new company, and several meetings have been held lately by officials of the company in connection with the setting up of an organization in East Texas. Prompt action in handling the East Texas situation will save many thousand dollars for the operators, and possibly ward off court action that has already been threatened by some of the towns in order to protect their water supply.

Simms Raises Price

Simms Oil Company advanced its posted price on East Texas crude from 30 to 40 cents per barrel effective May 8 as result of the company having been successful in disposing of its own production and outside purchases in the near future on a basis of the new schedule. A pipe line gathering system is operated throughout the eastern portion of the Longview field by Simms Oil Company, with tank car loadings taking place over its rack at Willow Springs. The bulk of the oil handled by this company has been turned to Stanolind Crude Oil Purchasing Company, which in turn supplies the Destrehan, Louisiana, plant of Mexican Petroleum Corporation, an affiliated concern.

Clifford Mooers, head of Shasta Oil Company and Shano Oil Company, with offices at Wichita Falls and Longview, has resorted to newspaper advertising to arouse interest of independent operators and royalty owners in East Texas in taking a definite stand against the selling of crude oil to independent and major buyers at sacrifice prices. Mooers' two companies are developing leases in the Joiner and Longview fields. Plea was also made for united support of the Texas Railroad Commission in its efforts to enforce ratable takings of crude.

Stanolind Increases Price

Stanolind Crude Oil Purchasing Company, subsidiary of Standard Oil Company (Indiana), has been forced to raise its crude price offers in East Texas since the inauguration of proration, and is credited with having contracted recently for 75,000 barrels of oil to be delivered by Independent Pipe Line Company at a flat price of 40 cents per barrel loaded on cars. A purchase of 30,000 barrels of oil at 30 cents per barrel loaded on cars from the Kilgore field is also reported to have been made recently with Sabine Pipe Line Company of Texas.

Operators Want Out

Investment opportunities in oil properties seldom equaled are awaiting buyers in East Texas, owing to the desire of many operators and companies to withdraw from the highly competitive play after having been unsuccessful in lining up satisfactory market outlets. Federated Oil Company, representing a four-way partnership of Petroleum Producers Company, Bridwell Oil Company, United Producers Company and O'Donohoe-Gibson Drilling Company, all of Wichita Falls, sold its B. F. Laird 65-acre lease with two completed wells, rated at more than 15,000 barrels capacity each, for $175,000 cash and $50,000 payable from oil runs, to Humble Oil & Refining Company. This property is surrounded on three sides by leases held by Humble Oil & Refining Company, and if developed would require the new owner to spend the equivalent to the purchase price in taking care of offsets around the 65-acre tract. Owners of the Federated Oil Company have made sales in the past of comparatively small producing properties in the North Texas district for greater considerations than realized from this prolific lease. Federated Oil Company had produced only a few thousand barrels of oil from the Laird lease, although the first well was completed March 1, as officials of the company would not make contracts at sacrifice prices, and no buyers were available otherwise.

Tidal Adopts Flat Price

Tidal Refining Company reduced its posted price effective May 9 from the Mid-Continent gravity scale, amounting to 67 cents for 40 gravity and above, to a flat price of 40 cents per barrel as result of other major companies having failed to join the small group that pay the Mid-Continent scale. Humble Oil & Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company are the only members of this group now. Tidal Refining Company is handling the entire output of Tidal Oil Company in the three areas, and also buying a large volume of oil daily, using 10,000 barrels of space in Magnolia Pipe Line Company's trunk line to the coast, and also is making shipments via The Texas Pipe Line Company's system.

Humble Buys Crude

Humble Oil & Refining Company is reported to have agreed to purchase about 14,000 barrels of oil daily from leases of other operators and companies in the Joiner-Kilgore area in addition to taking care of its own production. About 15 producers have been, or will be, given market relief by this company at the Mid-Continent gravity scale price.

(*Continued on page 68*)

EAST TEXAS FIELD BEING RAPIDLY DEFINED

(*Continued from page 27*)

Rusk County. It in turn was about two miles west of another dry hole, Capps-Smith's Cochran 1.

While the northern and southern ends of the large East Texas field are still open for extensions, the eastern boundary of productive territory between the present northern and southern ends is fairly well defined, following the course indicated on the accompanying map. Unlike the western, southern and northern limits, which are to be determined by dip of the sand into salt water, the eastern boundary of the field is controlled by presence or absence of the regular producing sand. The field ends on the east where the "Woodbine" sand pinches out against the buried Sabine Uplift between impervious Austin chalk above and Georgetown lime below, first the "Woodbine" sand and later the Austin formation having been deposited in an ancient sea as the water crept up over the Georgetown lime which constituted the surface of the land mass of that time. Enough wells have already been drilled to define fairly well the edge of the field, and it is shown on the map, falling to the west of wells which did not encounter the sand or which found the sand too thin or too tight to yield oil, although having showings of oil.

Western Boundary of Production

The western limits of the productive territory are determined to some extent, but some alterations in the line as shown on the map are to be anticipated.

As previously pointed out, the western edge of the Joiner or Henderson-Arp district has apparently been reached as revealed by the fact that Sinclair Oil & Gas Company's Amanda Wiley 1 flowed 90 per cent salt water after logging sand from 3314 to 3326 feet sub-sea.

Northerly from that well the productive area will apparently swing gradually back eastward, passing a short distance west of Overton. The western outpost test, East Texas Refining Company's and Frank R. Foster's A. T. Tyiska 1, located about two miles south of Overton, has set casing; it is reported to have found top of the sand at 3281 feet below sea level, as against 3256 feet sub-sea in Guy V. Lewis et al's S. S. Cook 1, and 3291 feet sub-sea in Gulf Production Company-Devonian Oil Company's Motley 1, other wells located in the western portion of the field, a few miles to the south and north, respectively, from the Tyiska test.

As in the Joiner area, the Kilgore district has reached its limit on the west, as revealed by salt water encroachment in approximately a score of wells on the edge of the field, including the first wells on the E. B. S. Florey leases of Magnolia Petroleum Company and Burton Drilling Company, first producing wells of the large East Texas field to develop water trouble. Magnolia Petroleum Company's E. B. S. Florey 1 showed large percentage of salt water immediately after completion in sand logged from 3317 to 3338 feet sub sea, and did not entirely eliminate the water upon plugging back; and other wells in the Kilgore district have since developed water although they had encountered the top of the sand at depths of 3300 feet or somewhat less below sea level. Although the oil sand in the Kilgore district dips rapidly to the west, affording that area a comparatively narrow width, the recovery is expected to be favorably affected by the relatively large thickness of the sand in this part of the field. One well, Gulf Production Company's Birdsong 1, located about two miles due north of the Kilgore discovery well, and almost mid-way between eastern and western edges of the field, drilled into the oil sand a little over 100 feet, resulting in appearance of considerable percentage of salt water.

Longview-Gladewater District

While the Joiner and Kilgore districts are fairly well defined on the west, there is less certainty as to the west extent of the Longview-Gladwater section, which will apparently be the widest portion of the field. Some opinions place the west edge of the productive territory even beyond the dashed line indicated on the accompanying map. At any rate, the boundary will likely be as far west as the indicated line, judging from data in Sinclair Oil & Gas Company's M. T. Cole 1, Selby Oil & Gas Company's P. J. Snavely 1, Flannery & Bradley's W. H. York 1, and Mudge Oil Company's Richardson 1.

Sinclair Oil & Gas Company's Cole 1, located south of Sabine River and about four miles south of Gladewater, is structurally low, having found the oil sand from 3314 to 3329 feet below sea level. This is the well which recently caught fire, fatally burning nine men, and which was still running wild, scattering oil into the air, at the close of the past week, being still out of control, although the blaze had been extinguished.

Selby Oil & Gas Company's Snavely 1, however, is considerably higher than the Sinclair-Cole well, first sand having been topped at 3256 feet sub-sea; and evidence was found late last week in Flannery & Bradley's York 1, which indicates that the productive area will extend considerably west of Gladewater instead of ending approximately at Gladewater as formerly considered likely. For the well on the York land has proved to be exceptionally high structurally. The well is reported to have cored oil sand from 3505 feet to 3510 feet. The surface elevation being reported as 289 feet, the sand would be at 3216-3221 feet below sea level; but according to some reports the top of the sand was found at 3499 feet, or at 3210 feet sub-sea.

Mudge Oil Company's Richardson 1 is as yet the only producing well in the Upshur County portion of the field. It topped the oil sand a few feet lower than the Selby-Snavely well, and is rated as one of the largest potential producers in the field. It is credited with having flowed 500 barrels of oil into tanks in 15 minutes, or at the rate of 48,000 barrels per day on a production test late last week, although it had earlier gauged 280 barrels in 2½ hours through tubing and choke.

E. E. Eslick, Brown & Little's W. R. Nicholson 1, most northerly producing well of the East Texas field, cored rich oil sand about two weeks ago, but was not completed until the past week, when it flowed at the rate of 2400 barrels daily through 11/16 inch choke. The oil sand was encountered at 3266 feet below sea level, five feet lower than in the Mudge Oil Company well and 10 feet lower than in Selby Oil & Gas Company's Snavely 1.

Showing the whole East Texas field, from the northern extremity of the Longview-Gladewater district through the Kilgore and Joiner areas, the map on page 77 is on a scale which does not permit spotting all wells, there being over 350 completed producers and more than 400 tests drilling or in some stage preparatory to drilling. Only edge wells are shown, consequently, together with a few in the interior.

These various wells are included also in the tabulation on page 66. Listing the depths below sea level at which the wells encountered the top of the oil sand, along with total depths to which they were drilled below sea level, the tabulation will serve as an aid in studying the map.

East Texas Wells Defining Producing Limits

LONGVIEW-GLADEWATER (NORTHERN) DISTRICT, GREGG-UPSHUR COUNTIES

County and Well—	Elev.	Top of sand (below sea level)	Total depth (below sea level)	Initial* Prod.	Remarks—
West Edge (North to South)—					
Tips DeArman-Capps et al's Chas. Cobb 1 (Upshur County)	428	3349	3436	.....	D&A—Salt water in Woobine sand at 3349-3414 sub-sea.
Mudge Oil Co.'s Richardson 1 (Upshur County)	461	3261	3282	.....	Gauged 280 bbls. in 2½ hrs. via tubing and choke; Reported to have flowed 500 bbls in 15 minutes (at rate 48,000 bbls. daily) on test late last week.
Flannery & Bradley's W. H. York 1, e Gladewater	289	3210	....	.....	Set casing after coring oil sand to 3510 ft.
Selby O. & G. Co.'s P. J. Snavely 1, s Gladewater	273	3256	3310	20,000	1st sand 3256 sub-sea; 2nd, 3301-3310.
Sinclair O. & G. Co.'s M. T. Cole 1, se Selby's Snavely	332	3314	3328	20,000	Ran wild, burned; 9 men died from burns.
East Side (north to south)—					
Hurlburt & Brown's L. L. Mackey 1	...	....	....	.....	Drilling chalk at 2690 ft.
E. E. Eslick, Brown & Little's W. R. Nicholson 1	396	3266	3275	.....	2400 bbls 11/16-in choke.
Mrs. Mamie Hammond et al's J. M. Hamby 1	375	3155(?)	3348	.....	D&A—Top Georgetown 3309 ft or 3299 ft sub-sea.
Meek & King's School 1	...	....	....	.....	Set surface casing.
Skipper Oil Co. & Lacy's Maggie Magrill 1	419	3225	3239	15,000	
Blackwell O. & G. Co.'s M. Magrill 1	446	3215	3228	1,800	
Arkansas Fuel Oil Co.'s W. L. Hestland 1	413	3193	3195	1,800	
E. E. Eslick & Little's Springhill Church 1	411	3190	3212	7,500	
T. D. Humphrey et al's A. F. McAfee 1	349	....	3229	....	D&A—Top Georgetown 3189 ft sub-sea.
Sultan Oil Co.'s S. R. Thrasher 1	328	3206	3236	9,000	
Skipper Oil Co. & Lacy's Thad Snoddy 1	387	3186	3225	12,000	
Tidal Oil Co.-J. K. Wadley & Jim Evans' A. A. Castleberry 1	416	....	3198	....	D&A—Top Georgetown 3196 ft sub-sea.
Smitherman & Greer's Geo. Jones 1	...	....	....	....	Drilling 2783 ft chalk.
Arkansas Fuel Oil Co.'s & Yount-Lee's F. K. Lathrop 1-A (discov.)	401	3168	3186	12,000	
Tidal Oil Co.'s Lathrop 1	430	3173	3226	1,632	Small well, e edge.
Ben Youngblood et al's Wm. Lamb 1	401	....	3218	....	D&A—Top Georgetown 3133 ft sub-sea.
O. L. Hickman et al's Maude Smith 1	373	....	3207	....	D&A—Top Georgetown 3182 ft sub-sea.
K. E. Merren-Miller-Van Horn's Maude Smith 1	377	....	3228	....	D&A—Top Georgetown 3173 ft sub-sea.
F. R. Foster-East Texas Ref. Co.'s Fisher-Rodden 1	333	3117	3209	3,000	Bottom of producing horizon 3201 ft sub-sea.
W. C. Ray Drilling Co.'s Maude Smith 1	374	....	3196	....	D&A—Top Georgetown 3172 ft sub-sea.
Alco Royalty Corp.'s J. R. Castleberry 1	268	3175	3251	....	D&A—Top Georgetown 3224 ft sub-sea.
Heep Oil Corp's Barber 1	312	3203	3241	12,000	
J. R. Travis et al's A. G. Morton 1	319	....	3381	....	D&A—Top Georgetown 3214 ft sub-sea.

KILGORE (CENTRAL) DISTRICT

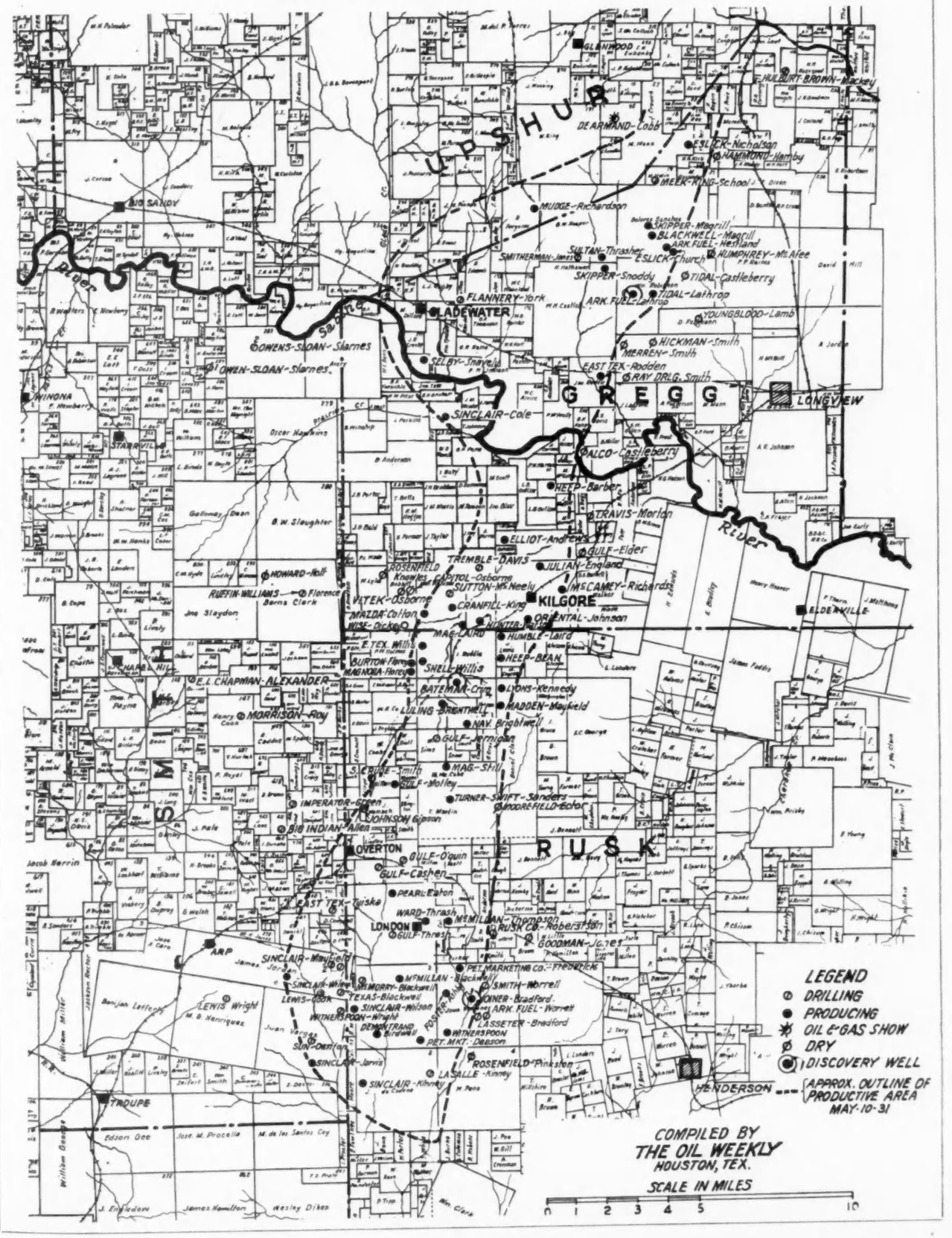
(Southwestern Gregg County and Northwestern Rusk County, to vicinity of Overton)

West side (north to south)—					
H. W. Elliott's S. G. Andrews 1	382	3250	3268	15,000	
Kenzy Tremble's Griffin Davis 1	...	....	....	....	Drilling.
Rosenfield et al's Knowles 1	435	....	....	....	Shut Down.
Vitex Combine's P. F. Osborne 1	...	....	....	....	Drilled to 1130 ft and moved rig off.
Capitol Drilling Co.'s P. E. Osborne 1	...	....	....	....	Abn at 4010 ft; wtr in Woobine sand.
Howard Pet. Corp.'s Lee Holt 1 (Smith County)	433	....	3487	....	Abn. Cored water sand at 3920 ft and was abn.
Ruffin & Williams' Florence 1 (Smith County)	...	....	....	....	Mystery well; rep'td dr 3770 ft recently.
Sutton et al's McNeely 1	...	....	....	....	Shut down 1500 ft for dr stem.
Cranfill-Reynolds Co.'s King-Blackburn 1	314	3281	3316	4,800	On ¼-in choke.
Mazda Oil Co.'s M. M. Cotton 1	333	3317	3326	480	Made 20 bbls. hr. on ⅛-in choke, 5% salt water
Wise & Jackson's Wash Dickey 1	...	....	....	....	Drilling.
East Texas Ref. Co.'s Willis 1	365	3323	3327	13,500	Reported to have showed salt water.
Burton Drilling Co.'s Florey 1	354	3369	3385	10,000	Showed salt wtr; may have crooked hole.
Magnolia Pet. Co.'s Florey 1	330	3317	3338	20,000	Made salt wtr on completion.
Shell Pet. Corp.'s Willis 1	355	3306	3308	2,880	Showed little wtr flowing via choke.
Gulf Prod. Co.-Devonian Oil Co.'s Motley 1	373	3291	3308	15,000	
Southern Crude Oil Purchasing Co.'s Smith 1	...	....	....	....	Location.
Johnson et al's Gipson 1	...	....	....	....	Location.
Imperator Oil Co.'s Green 1 (Smith County)	...	....	....	....	Shut down.
Big Indian Oil Co.'s Holland 1, (Smith County)	...	....	....	....	Shut down.
Central Portion (north to south)—					
Hunter-Rowe et al's J. R. Watson 1	384	3214	3253	15,000	
Magnolia Pet. Co.'s Ben Laird 1	369	3205	3218	25,000	
Humble O&R Co.'s (was Bateman's L. D. Crim 1 (discov.)	403	3237	3249	15,000	
Luling O&G Co.'s Brightwell 1	356	3248	3274	15,000	
Navarro Oil Co.'s Brightwell 1	421	3245	3283	4,800	
Gulf Prod. Co.'s Jernigan 1	366	3264	....	....	Set casing.
*Magnolia Pet. Co.'s C. C. Still 1	442	3201	3213	15,000	
Turner & Swift's S. E. Sanders 1	545	3203	3220	....	Producer.
East Side (north to south)—					
D. H. Byrd-Gulf Prod. Co.'s Frank Elder 1	341	....	3671	....	D&A—Top Georgetown 3225 ft sub-sea.
Julian Oil Co.'s J. M. England 1	322	3201	3258	1,680	
Joe McCamey-W. L. Brandon et al's J. F. Richards 1	339	3167	3235	....	D&A—Top Georgetown 3223 ft sub-sea; made little oil.
Oriental Oil Co.'s F. Johnson 1	370	3154	3172	6,720	
Humble O. & R. Co.'s S. S. Laird 2	386	3139	3275	896	
Heep Oil Corp.'s J. E. Bean 1	418	3217	3262	8,000	
C. H. Lyon's Major Kennedy 1	463	3202	3284	5,000	
Madden et al's Mose Mayfield 1	476	3228	3258	600	Quit flowing.
Morefield et al's Etor 1	401	3193	3299	....	D&A—Top Georgetown 3193 ft sub-sea; had 6 inches sand above Georgetown.

(See Page 68)

Probable Productive Area in East Texas

(As Shown by Development to May 10, 1931)



East Texas Wells Defining Producing Limits

(*Continued from page 66*)

JOINER OR HENDERSON (SOUTHERN) DISTRICT

(Rusk County south of Overton and southeastern Smith County)

County and Well—	Elev.	Top of sand (below sea level)	Total depth (below sea level)	Initial* Prod.	Remarks—
West Side (north to south)—					
East Texas Ref. Co.'s and Frank R Foster's A. T. Tyiska 1 (Smith County)	529	3281	....	....	Set casing after coring oil sand.
Sinclair O. & G. Co.'s Mayfield 1	539	....	....	....	Location.
Sinclair O. & G. Co.'s Mayfield 2	541	....	....	....	Coring 3800 ft.
Sinclair O. & G. Co.'s Amanda Wiley 1	539	3314	3326	3,600	90% salt water.
Guy V. Lewis et al's S. S. Cook 1	419	3256	3277	12,000	
Guy V. Lewis et al's Wright 1	...	....	....	....	Shut down.
The Texas Co.'s Blackwell 1	461	....	....	....	Drilling.
Witherspoon Oil Co.'s Wright 1	425	3241	....	....	Not yet completed.
Sun Oil Co.'s Denton 1	...	....	....	....	Drilling.
Sinclair O&G Co.'s A. S. Jarvis 1	389	3310	3320	6,000	
Sinclair O&G Co.'s Ida L. Kinney 1	377	3290	3298	6,000	
Central Portion and East Side (north to south)—					
Gulf Prod. Co.'s O'Quin 1	...	....	....	....	Drilling.
Gulf Prod. Co.'s Cashen 1	...	....	....	....	Drilling.
Pearl Oil Co.'s (Vitek's) G. W. Eaton 1	450	3231	3255	4,400	
Ward Oil Corp.-J. R. Elliott & Johnston's E. S. Thrash 1	539	3207	3260	1,350	On 1/32-inch choke.
McMillan (Millican) et al's Thompson 1 (John Darley sur.)	489	3158	3218	15,000	
Gulf Prod. Co.'s Thrash 1	...	....	....	....	Drilling.
Rusk County Oil Co.'s Robertson 1	...	....	....	....	Junked and abn 1201 ft.
McIntyre Drilling Co.'s M. L. Thompson 1, F. Cordova survey	529	3188	3748	5,500	
Petroleum Marketing Corp.'s W. H. Frederick ?	...	....	...	....	Flowed 138 bbls daily at 3632 ft.
McMurry et al's Blackwell 1	366	3277	3299	....	Coring.
McMillan et al's Blackwell 1	427	3244	3697	4,500	
Sinclair O&G Co.'s Blanche Wilson 1	...	....	....	....	Flowed 260 bbls per hr. at 3648-3656 ft.
Demontrand et al's Birdwell 1	366	3230	3254	3,600	
Foster-Deep Rock Oil Co.'s Ashby 1	429	3173	3187	4,200	
Geo. S. Anderson-Cox et al's W. H. Frederick 1	466	3098	3124	10,000	
C. M. Joiner's (E. R. Tennant, Rec.) D. Bradford 3 (Discov.)	398	3138	3194	400	
L. L. Smith et al's Worrell 1	425	3117	3248	....	D&A—Top Georgetown 3203 ft sub-sea.
Arkansas Fuel Oil Co.'s Worrell 1	412	3135	3288	....	D&A—Top Georgetown 3228 ft sub-sea.
Lasseter et al's Bradford 1	387	....	3198	....	D&A—Austin at 3002 ft.
C. L. Witherspoon Oil Co.'s D. Bradford 1	475	3170	3200	3,500	
Petroleum Marketing Corp.'s Deason 1	475	3191	3215	2,880	
Rosenfield et al's Pinkston 1	363	3184	3243	....	D&A—Top Georgetown 3227 ft sub-sea.
LaSalle & Davenport's Kinney 1	401	3209	....	....	Set casing after coring 2 ft oil sand; waiting for cement to harden.

*D&A denotes "dry and abandoned."

EAST TEXAS HIGHLIGHTS

(*Continued from page 64*)

Rail Shipments Off

Launching of proration in East Texas has resulted in decrease of railroad tank car shipments to about 65 per cent of the average daily volume attained during April, and to about 50 per cent of the volume handled at the close of April.

From the Joiner and Kilgore areas alone tank cars moved a daily average of approximately 125,000 barrels during April, and toward the end of April the daily average was in excess of 140,000 barrels.

International-Great Northern railroad furnishes nearly the entire outlet for crude leaving the Joiner and Kilgore fields by tank car, and its peak movement of the East Texas oil occurred shortly before the end of April, when 870 cars were shipped out in one day.

Another Rack

British-American Oil Producing Company of Tulsa, Oklahoma, plans to make crude oil shipments from the Joiner-Kilgore district, East Texas, over a 50-car capacity loading rack on the International-Great Northern railroad. Construction of the rack was started late last week, the location being one-fifth of a mile north of Overton on the west side of the railroad. The rack will accommodate 50 cars at a time through use of a track of 25 cars capacity on each side of the rack.

John C. Calhoun and C. O. Witherspoon are building a 20-car capacity loading rack (single track) on the south side of the International-Great Northern railroad one mile east of Overton on the branch line which leads to Henderson, proposing to use it in handling Joiner field crude.

Bell Oil & Gas Company, Tulsa, Oklahoma, which is contemplating construction of a 2500-barrel refinery in the Longview district, East Texas, is negotiating for a plant site 2½ miles southwest of Longview. The plans in connection with the proposed refinery contemplate construction of a tank car loading rack about 1000 feet east of that of Atlas Pipe Line Company on a site north of the International-Great Northern railroad.

Atlantic Refining Company is reported to have contracted recently for 100,000 barrels of East Texas crude to be delivered by Cranfill-Reynolds Company into tank cars at the latter's rack on the Santa Fe Railroad, near Longview, at a flat price of 40 cents per barrel. The former is receiving oil in spot quantities from a number of East Texas shippers for use in its plants on the Atlantic Coast.

Difficulties encountered by oil field scouts in obtaining information in East Texas have multiplied since the inauguration of proration, as the many companies and operators that are more or less opposed to production restrictions have clamped the lid down on giving out information. Production figures and pipe line runs are especially difficult to obtain.

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Two Important Extensions Promised in Pettus Field

San Antonio, Texas.—Two important extensions are being provided to the Pettus district, Bee County, by wells now in process of completion. One well is in the Ray-McKinney discovery pool, while the other is in the extension pool, three miles north of Pettus.

Early in the week, Gulf Coast Oil Company (Moody-Seagraves Producing Company) cored the sand at 3695 feet, which showed oil, in McKinney 2 and prepared to make a drill stem test. This well is located 150 feet from the south line of the 260-acre tract and 500 feet west of a line between McKinney 1 and United Production Company's Ray 13. It is in the George Habbermacher Survey, three miles north of the Pettus pool.

The McKinney 1 was completed nearly a year ago by William F. Morgan as a large gasser at 3692 feet. South of the McKinney 1, United Production Company established oil production in the same sand by the completion of its Ray 13.

The other important extension of the week was the United Production Company's Ray 38, 900 feet east and 10 degrees south of Ray 35, fartherest production in the Ray-McKinney or discovery pool. The well topped the sand at 3947 feet and set casing without making a drill stem test. Preparations are now being made to drill the test. It is in the T. Hanson Survey. One mile east and slightly south of this well in the Willis A. Moore Survey, the company is preparing to resume drilling in its Ray 37 after setting 420 feet of surface casing.

About one mile south and slightly west of the Pettus townsite, Davis et al are rigging up George Ray 1, which is located just north of William F. Morgan's Ray 1, which last year showed salt water and oil in the Pettus sand. The well holds much interest as it likely will provide another extension to the field.

Refugio Field Still Most Active South Texas Area

San Antonio, Texas.—Refugio field continues to be the most active district in South Texas or the Gulf Coast. Dozens of wells are being drilled to the deep horizons.

Following is a report of operations in the field:

Houston Oil Company, Helen Ryals 5, set 514 feet surface casing; Wilson Heard 10, rigged up, to spud; O'Brien 2, location; Lamber 3, extreme east side field, abandoned 6545 feet, dry; Rooke 14, 3 miles west field, gas district, abandoned dry 6124 feet; St. John 1, rigged up, prepare to spud.

Seagraves Producing Company, Shelley 1, block 4, originally showed salt water at 6455 feet, now completed as gasser, spraying gasoline, 1650 pounds on tubing, 1850 pounds on casing; O'Conner 3, rigged up; O'Conner 6, set whipstock 6300 feet, mill out; O'Conner 8, drilling 6110 feet, shale and lime.

L. L. Smith, Inc., City 1, block 109, drilling 6435 feet.

United Production Company, O'Brien 6, derrick; O'Brien 9, casing set 6462 feet, wait on cement; Power 6, set 7-inch casing 6456 feet, wait on cement; Power 7, location; Power 8, location; Fox 1-A, completing, casing set 5875, sand 5875-78 feet, showed 250 pounds on 1-4 inch casing and filled four-inch drill stem in 14½ minutes with solid oil, no water; Fox 4, drilling in shale and lime, 6484 feet; Rose Lamber 2-A, tested salt water 6496; W. H. Heard 6, prepare to complete, casing set 3672 feet; Holmes Heard 5, offset to South O'Brien 5, derrick.

McFadden Area, Victoria County, Holds Spotlight

San Antonio, Texas.—The McFadden district of Victoria County continues to hold the spotlight of development, despite the fact that it has been one of the most expensive exploitations in South Texas. Two gas horizons have been opened in this sector after the drilling of a dozen wells, the majority of which were sunk below 3750 feet.

United Production Company is building the derrick for its McFadden 4-A, 3000 feet northwest of Lion Oil Refining Company's discovery well. It is on the Lion-United block in the southern part of the county.

The Texas Company is preparing to move onto its McFadden 3 location, west of the McFadden 2, which several months ago blew out at 2025 feet and ran wild for nearly a week before being capped.

T. B. Slick Estate is drilling at 2412 feet in its McFadden 1, northeast of Lion Oil Refining Company's production. Simpson-Fell Oil Company and Westheimer et al's Levi 1, 15 miles northeast of the field is making hole below 2400 feet. Both tests are being drilled by the C. R. M. Drilling Company.

North of Victoria on the Beck Salt Dome prospect, Houston Oil Company has made a location for its Beck 1. It is in the northwest corner of the T. & N. O. Survey.

Schoolfield and O'Byrne Most Prolific Area in Duval County

San Antonio, Texas.—Further increases in production of the Schoolfield and O'Byrne pool, now the most prolific field in Duval County, was expected this week as operators began completion of two wells in proven territory.

Magnolia Petroleum Company has the sand at 2349 feet in its Wilson 3, Survey 134, and is waiting on cement. The Texas Company's Bishop Duval Land Company 1, Survey 135, is preparing to drill out plugs. The well has casing set on top of the sand at 2349 feet.

The deepest test in the entire district at this time is Humble Oil & Refining Company's Kohler 50, which is setting 9⅝-inch casing at 6009 feet; total depth is listed at 6084 feet. The well is located on Survey 164 of the Kohler pool.

Also in the Cole field, S. J. Carpenter (Gus Pape) has a sand at 1665-69 feet in his Juan Benavides 1, which shows oil. The test is to set casing at this depth. It is located on Block 38, subdivision 1 Carpenter subdivision, Mesquite grant.

Thirteenth Well in Hidalgo County Tested This Week

San Antonio, Texas.—Fernandez 5, the thirteenth wildcat drilled in Hidalgo County by Dayle L. Smith Oil Company since September, 1919, when Daskam 1 was spudded in, is being tested this week. The well is located three miles north of Sam Fordyce.

Fernandez 5 blew in as a gasser in January, 1930, and made an estimated 6,000,000 cubic feet daily. Fittings were cut away by the heavy sand blast occasioned by tremendous pressure and the well ran wild for four days before being mudded in. Various delays have prevented cleaning the hole, but this was completed several days ago. Casing has been set to 3968 feet, leaving only 58 feet of open hole to the total depth of 4026 feet.

Since September, 1919, eight wells have been drilled on the Daskam lease and five on the Fernandez lease, whose combined acreages total about 11,000 along a peculiar geological formation in western Hidalgo County. Fernandez 5 is located about 300 yards east of Daskam 3.

White Point Field Well Is Ready for Drilling In

San Antonio, Texas.—Saxet Oil Company's White Point Development Company 4 in the White Point field, San Patricio County, has set casing about 4905 feet and is making preparations to drill in. This well showed a series of sands and shale from 4910 to 4953 feet, saturated with oil all the way down and possibly will make a producer. Several drill stem tests of the formation failed.

If the well is successfully completed, it will be the second oil producer in the field, the other one being Houston Oil Company's Rachel 17, which made 60 barrels from 4901 feet. It showed a high gas pressure and the fact that the Saxet well got the pay a bit lower indicates that it might make an even better oil producer.

The White Point field is another district in the South Texas coastal plain that has been a gas producer at a shallow depth and later developed into an oil field in the deep horizons.

San Antonio, Texas.—Carolina-Texas Oil & Gas Company completed its Barnsley 9 in the Carolina-Texas field, Webb County, as a 15,000,000 cubic foot gasser at 2567-75 feet. The 6⅝-inch casing is set at 2567 feet. The well is showing 450 pounds rock pressure. It is on block 13, Survey 268.

San Antonio, Texas.—The Saxet field in Nueces County shortly will receive another producer. Saxet Oil Company's Dunn 8, northeast of Dunn 7, is coring shale at 4020 feet, about 75 feet above the producing level of the field. Gulf Coast Oil Company's Maggie Harrell 1 in the Saxet field is drilling at 2800 feet. L. L. Smith's Hunter 1 in the Saxet field has reached a depth of 1700 feet and is temporarily shut down for engine repairs.

San Antonio, Texas.—Carsil Oil & Gas Company's McGill 2, in Jim Wells County, apparently has missed the sand encountered in McGill 1, recently completed as a large gasser. The well at last reports was coring at 2715 feet, showing a broken formation. The McGill 1, 900 feet to the south was brought in as a 50,000,000-cubic foot gasser at 2683-89 feet recently, but was abandoned when salt water broke in. The test is in the William D. Baldwin Survey, three miles north of Armagosa.

Three Sub-Committees Plan to Study Problems in Gulf Coast

Houston.—The special advisory committee selected from the group of Gulf Coast operators, which met in Houston recently for the purpose of working out plans for holding down production in this area, decided in a meeting May 7 to dissolve itself into a group of three units or sub-committees. These sub-committees were scheduled to meet this week to study the individual problems of each producing area in the Gulf Coast.

Two of the sub-committees met Tuesday of this week, May 12, and the other meets Thursday, May 14. Each subcommittee will have one of the proration districts of the Gulf Coast as its topic of study. The districts comprising this area are Numbers 3, 4 and 15. D. B. Harris, Humble Oil & Refining Company, was named chairman of subcommittee 1 and George A. Peddy, Humphreys Corporation, was named chairman of the second sub-committee. R. H. Hargrove, chairman of the general advisory committee which is composed of 11 members, was named chairman of the third sub-committee.

The general advisory committee will meet again on May 18 to hear reports on the findings and decisions of the sub-committees regarding the various producing fields of this section. These reports will be submitted to the railroad commission at that time.

Carter Failure Again Gives Southern Oklahoma Set Back

Ardmore.—Interest in southern Oklahoma development receded one step further when Carter Oil Company announced abandonment of Estella Florence 1, NW NE Section 11-3s-6w, approximately three miles west of the old Loco field in southern Stephens County. This test was drilled on the strength of structural indications revealed through drilling several shallower tests in the immediate vicinity supplemented by core-drill information. The fact that it was abandoned at 3294 feet in limestone is uninteresting but a definite correlation of this lime probably warrants further thought. No horizons were definitely identified after passing through the Pontotoc group at 800 to 1000 feet. Absence of easily recognizable key beds or horizon markers makes correlation exceedingly difficult in the entire southern Oklahoma territory. At 2285 feet the bit entered a limestone which has the general characteristics of Pennsylvanian limes of the regions and from about 2800 feet downward the section was limestone with few breaks. Identification of Arbuckle lime is doubly difficult because of the scent faunal evidence and the limes in question may be Arbuckle or lower Simpson. Wells drilled in Sections 4 and 22 of the same township went below 3500 feet without encountering appreciable thicknesses of limestone, which indicates the existence of a buried ridge regardless of the interpretation placed on the age of the limes found in the Carter well, assuming that they are either Simpson or Arbuckle. Rocks of Ordovician age, presumably the Viola, Simpson, or Arbuckle, were encountered in the Healdton pool as shallow as 800 feet but in general were from 1000 to 1200 feet below the surface on the higher parts of the structure and below 2000 feet well down on the limbs of the structure. On the highest Ordovician points the productive sands of the Healdton zone did not extend over the top of the structure. It is possible that the Carter well encountered an old buried ridge composed of Ordovician formations and that sands equivalent to the Healdton zone may be found farther out. Additional wells may be drilled to test this theory at some time in the future.

Gulf Coast Field Developments

JACK LOGAN, ***Staff Representative, Houston, Texas***

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Offsetting Campaign Subsides On West Side at Barbers Hill

Houston.—The offsetting campaign on the west side of the Barbers Hill field by Humphreys Corporation, The Texas Company, Sun Oil Company and Yount-Lee Oil Company, has practically subsided with completion of the more important offset wells in the W. D. Smith Survey. Humphreys Corporation completed its E. H. Winfree 2 for 1800 barrels at 5627 feet after nine joints of screen had been set. The well is flowing through five-eighths inch choke, registering 680 pounds pressure per square inch. Winfree 5 and 6, offset wells of Humphreys Corporation to Sun Oil Company's well, and Yount-Lee Oil Company's test, are drilling at 3930 feet and 150 feet respectively.

Winfree 4 of the Humphreys Corporation was completed last week for 1900 barrels at 5604 feet. This well is flowing through five-eighths inch choke, with a recorded pressure of 100 pounds.

The Texas Company's E. H. Winfree 2, is drilling in hard lime rock at 5190 feet and should be down to the producing level within the next few days. Winfree 3, also of The Texas Company, is drilling the plug at 5374 feet, preparatory to making a test of the sand encountered at that depth.

Mills Bennett Production Company recorded the third completion for the field during the past week when it brought in its Gulf Smith 1 for 745 barrels of fluid at 5681 feet. The well came in making 24 per cent salt water; production is flowing through five-eighths inch choke. The Texas Company abandoned its J. F. Wilburn 5, in the east side of the field, at 1323 feet.

Three Completions Possible in Louisiana Gulf Coast Area

Houston.—Operations in the Louisiana Gulf Coast area point to three possible completions during the coming week.

Vacuum Oil Company's State 7, in the Lockport field, encountered an oil sand early in the week at 6558 feet and drilled into it to 6568 feet.

Calcasieu Parish will likely furnish a second completion from shows found in Gulf Refining Company's Lutcher-Moore 27, Starks field, where the test encountered a good show of oil at 1095 feet. The sand was cored seven feet.

Pure Oil Company is waiting on cement to set in its Yount-Lee 10, Sweet Lake, Cameron Parish, to make a test of the oil sand found at 7366 feet. The hole was drilled to a total depth of 7385 feet before the casing was set.

This well was located in the center of the Sweet Lake field with the intention of making a deep test of it. It has passed any drilling mark previously set in this field and will likely locate a new producing horizon. Aside from being the deepest test in the Sweet Lake field, it will make Sweet Lake the second deepest producing field in the Gulf Coast, if it is completed as a producer, the depth being surpassed only by a 7450-foot commercial well completed by Yount-Lee Oil Company in the Evangeline (or Jennings) field, South Louisiana.

Complete Well in Sulphur Field, Calcasieu Parish, During Week

Houston.—Union Sulphur Company completed its Fee 766, in the Sulphur field, Calcasieu Parish, Louisiana, during the past week for an initial production of 1500 barrels at depth of 4967 feet. The well is flowing 30 gravity oil through one-half inch choke, registering a working pressure of 440 pounds per square inch; 6⅝-inch casing was set at 4950 feet.

Four oil shows were found in drilling this well, the first one being discovered at 4202 feet. This sand, when tested showed salt water and the second sand encountered at 4338 feet also showed salt water. A third sand penetrated at 4565 feet was passed up after screen had been set for an attempt to make a producer of the test.

Fee 765, also in the Sulphur field, is drilling at 4345 feet in sand and should soon be down to the producing horizon. Location was recently made for Fee 767.

Gulf Coast Safety Chapter Meeting Held in Houston

Houston.—The Gulf Coast chapter of the Petroleum Safety Council held its monthly meeting at a luncheon at the Rice Hotel, Houston, May 8, with approximately 75 members present. V. H. Hayslip, safety director of Humble Oil & Refining Company, acted as toastmaster.

Don Wallace, Mid-Continent Oil & Gas Association, who as one of the chief speakers, urged all of the safety men and directors of safety to impress upon their men the importance of keeping worry off their minds in order to cut down the high frequency rate of accidents. The warning note was issued that this could be done by making the men feel as secure of their jobs as possible at this time. A suggestion was made by Mr. Wallace that the increased frequency rate of the Gulf Coast area, which has increased almost 50 per cent, can be diminished by studying the men, training them to make safe workers, teaching them to analyze problems, and then inspiring them to develop the initiative necessary for carrying out these solutions.

"Eye protection," was the subject of a talk by H. J. Larsen, Wilson Products, Incorporated. The importance of studying and obtaining the proper kind of goggles for all employees was the foundation of Mr. Larsen's speech. A review of a survey shows that there are over 16,000 industrial blind workers in the United States today, according to the speaker, representing an economic loss to the United States of $50,000,000 annually.

The gas menace in the East Texas fields was given due consideration in a talk by C. B. Stults, Humble Oil & Refining Company. The gas is non-poisonous but is so heavy with gasoline content that it settles in the valleys and is a fire hazard and menace to the lives of people coming within the area in automobiles. It has been found that boilers in the valleys have caused several of the fires, which were responsible for the loss of a part of the total of 25 lives from this menace. Some of the leases and batteries are being fenced off as a measure to lessen the hazard of this gas. Pipes from the tanks are run to pits where the gas is burned. Companies have issued orders that all company automobiles will stay on the ridges to reduce the chances of igniting the gas.

Department of Commerce Book Reviews Gulf Southwest Area

Petroleum production in the Gulf Southwest states of Arkansas, Kansas, Louisiana, New Mexico, Oklahoma, and Texas offered a primary market for industrial goods (not oil equipment) of approximately $20,000,000 in 1929 for drilling operations alone, and the products of refineries in that area were sold for more than $800,000,000 at the refinery, according to a comprehensive survey of the petroleum industry in that district by the Department of Commerce. Results of the survey are published in a book, which is now available to the public.

The compilation reveals the influence of petroleum on the economic condition, buying power and general development of the Gulf Southwest region of the United States.

Many related factors, such as the increased cost of prospecting for oil, the excess refining capacity, the problems of marketing the refined products, and the changing location of the principal markets for the products of southwestern refineries are discussed in detail.

The development of new producing territories, the report states, has greatly affected the concentration of population, nearly half the entire population increase in the discussed area during the past decade having occurred in 88 oil producing counties.

The importance of oil and gas output in gross income of the area is partially shown by fact that the region produces approximately 65 per cent of the crude oil, 60 per cent of natural gas, and 55 per cent of natural gasoline produced in this country, and 39 per cent of world production of crude petroleum.

With 14,000 wells completed in 1929 at an estimated cost of $374,000,000 the cost of oil discovery has quadrupled in the past decade in this area, a trend, the report states, which is only partially offset by the large production of some of the new wells. The cost of drilling a well in 1928, as a result of the greater depths to which they are drilled and the increasing percentage of dry holes, is estimated to have amounted to as much as the cost to drill 14 holes in 1912. Dry holes alone in 1928 are estimated to have cost nearly $92,000,000.

The refinery capacity in 1930 was two and one-half times as great as in 1919 with present capacity of the refineries in that area in excess of 1,500,000 barrels daily. Such capacity along the Gulf Coast increased 245 per cent during this period compared with 113 per cent for the rest of the area.

Growth in refining capacity has greatly outstripped increase in available markets, the report points out, and with increased production of refined products competition between refineries has increased proportionately. On January 1, 1930, excess capacity in this region was 365,271 barrels of crude oil a day over and above average amount actually run through the refineries daily in previous 12 months. This 24.9 per cent excess capacity does not include plants shut down and building, which represented daily capacity for refining an additional 95,430 barrels.

As result of greatly increased cracking capacity production of gasoline was found to have advanced even more rapidly than amount of crude oil consumed, the percentage increase being 366 since 1919, compared with similar increase in gasoline output for remainder of the country of 357 per cent.

The market for excess production of southwestern refineries is shown to have been greatly limited during the past 10 years. While plants in this area had capacity of 54,000,000 barrels of gasoline in excess of demand in the area in 1921, remainder of the country had total excess capacity of only 15,000,000 barrels, and territories contiguous to the Gulf Southwest had excess demand of 32,000,000 barrels, large enough to absorb a considerable portion of the Gulf Southwest surplus. By 1929, the report reveals, the total gasoline capacity in the southwestern area had increased to such extent that refiners had excess capacity, even over increased demand in that area, or at least 153,000,000 barrels, while excess demand of the contiguous territories, much of it supplied from other sources, was only 47,000,000 barrels.

Attempts being made in this region to reduce wasteful methods which have developed in marketing of refined products are outlined, and the methods used in marketing these products are discussed as they relate to marketing by the refiner, the wholesaler, and the retailer.

The report, containing 251 pages and profusely illustrated with maps and charts, entitled "Petroleum Industry of the Gulf Southwest," is issued as Domestic Series Number 44, and is available for 65 cents from the government printing office or from the District offices of the Bureau of Foreign and Domestic Commerce located in principal cities throughout the country.

Locate Fourth Deep Test in Lavaca County Near Ezzel

Houston.—Location for a fourth deep test in Lavaca County has been made by F. P. Zoch, independent operator of San Antonio. The new test, DeBard 1, will be on the 250-acre tract of the G. W. DeBard Heirs in the T. G. Western Survey. This area is in the southern part of the county about 1½ miles southwest of Ezzell.

The well will be drilled in approximately the center of the Zoch 6000-acre block, which comprises a part of the 30,000 acres of solidly leased territory in the Ezzell area. Gulf Production Company has a core test crew of nine men working in the western and southwestern part of the county in the vicinity of the larger block.

Brazoria County Gets Two Failures During Past Week

Houston.—Brazoria County registered two failures for the past week with abandonment of Freeport Sulphur Company's Fee 2001 at Bryan Mound. This well is located 2136 feet south and 590 feet west of the northeast corner of the Areola Survey, on the southwest side of the dome. The test was abandoned at 5260 feet in shale.

The second test abandoned during the week was that of Thos. Faust et al, Fee 6, a wildcat two miles south of Nash Dome. This test which was started in August, 1929, is located 600 feet from the north line and 580 feet from the east line of the H. & T. B. Survey. The well was abandoned in shale at 6515 feet.

Houston.—Activities in Wharton County include two tests, another test having been abandoned last week. Poole & Chappel abandoned their Poole 1, 1½ miles west of Lissie, at 550 feet in clay. A new location has been made by these same operators for Lee 1, 75 feet east and 25 feet north of the southwest corner of Section 20 of the H. & T. B. Survey. This well will be rigged up within the next week. The only active test in the county is that of H. H. Givans, Hudgins 3, which is located 1¾ miles east of Hungerford. This well is now fishing for tools at 1470 feet.

Louisiana--Arkansas Field Notes

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Complete Rodessa District Well for 38,516,000 Feet

Shreveport.—United Gas Public Service Company's Emmons 1, NE SW Section 27-23-16, Rodessa district, northwest Caddo Parish, which had gauged 4,635,000 cubic feet of gas showing 630 gallons of gasoline per 1,000,000 cubic feet of gas at 5541 feet, was deepened during the past week to 5570 feet in the upper Trinity formation and completed as a 38,516,000 cubic foot gasser with rock pressure of 2330 pounds. This well, the fifth wet gas producer in Rodessa is a half-mile north extension. It is North Louisiana's deepest commercial production.

Rig is up for another test by the same company in this field, M. K. Smith 1, NW NE Section 33-23-16.

Pelican Natural Gas Company (Sam D. Hunter and associates) drilling a 5500-foot wildcat just outside Shreveport's city limits to the northwest in Section 29-18-14, Caddo Parish, late last week was drilling hard shale at 2400 feet. Location for Gordon M. Garry's Hatcher 1, NW NE Section 11-17-15, Caddo Parish, announced as a 5500-foot test, has been abandoned.

Ohio Oil Completes Well In Champagnolle Field, Arkansas

Shreveport.—Ohio Oil Company, during the past week, completed Riley Furlong 3, Section 12-17-14, in the southeast part of the Champagnolle field of Union County, Arkansas, pumping 722 barrels of oil daily along with 145 barrels of salt water at 3013 feet.

Two new locations were announced in Arkansas during the week, one being a wildcat in Columbia County, Modisette and associates' Sharkle 1, SW NE Section 33-16-19, where rigging up is under way. The other location was for the proven Smackover area.

Lion Oil Refining Company and associates' Guy P. Hayes A-9, SW NE Section 4-16-15, Union County, Smackover's first 5000-foot test, late last week, was drilling shale at 3055 feet.

Zwolle East Field Is Most Active In North Louisiana

Shreveport.—The southeast offshoots of the Zwolle east field in Sabine Parish continue to be the most active area in North Louisiana, three new locations having been announced there during the week ending May 9 following a series of recent producers.

Lyons and Neely's Byrd 1 (formerly Baird Company 1), SE NE SW Section 1-7-11 a quarter-mile south of a recent two-mile east extension, was gauged during the past week as a 1200-barrel flowing well at depth of 2456 feet. Fresh water which showed up at intervals at first has been cased off. W. M. Coates' R. L. Gay 1, SW SW NW Section 1-7-12, is flowing 50 barrels daily by heads at 2322 feet from a break in the chalk; location has been made for an offset. In SW SE Section 1-7-11, Eddie Self has derrick up for Jacobs 1 and Texas Company has derrick up for De Latin 1, NW SE Section 3-7-11.

Two miles south of production in the southeast field, David M. Lide's Ponder 1, NE NW Section 15-7-11, hailed several weeks ago as an extension, is making five barrels daily from depth of 2800 feet. This well had been temporarily abandoned and later the hole filled with oil. An offset, however, was abandoned as a dry hole though it had a show of oil, at total depth of 2420 feet.

John Woodley's Sabine 1, NE SE Section 12-8-12, three miles north of east Zwolle production, was drilled in during the past week, 6⅝-inch casing having been cemented several weeks ago at 2310 feet. The Zwolle marl topped at 2312 was cored to 2392 feet without showing anything and hole was made with bit to 2403 feet where it was bailed without show. The chalk rock will be thoroughly tested as it is deepened.

Ohio Oil Company's Bowman-Hicks 8, SW NW NE Section 2-7-12, south Zwolle field, started flowing oil Saturday, May 9, at an estimated 100 to 200 barrels daily, from total depth of 2470 feet; 6⅝-inch casing was cemented at 2200 feet. It is a quarter of a mile west of the same company's Bowman-Hicks 7 and the same distance north of its Bowman-Hicks 3.

Test on North Edge of Jackson Gas Field Abandoned as Failure

Jackson, Mississippi.—On the north edge of the Jackson gas field Pirtle and Flint abandoned Payne 1, SW SW Section 27-6-1e, Hinds County, as a dry hole in the chalk at depth of 2557 feet during the last week, chalk was topped at 2540 feet. Considerable salt water showed in this well, though it was dry at bottom. This was Mississippi's only completion during the week.

There were no new locations.

Chief interest in the Jackson territory at present is centered in Love and associates' Rankin County wildcat, Muse 1, Section 32-7-4e, which late in the week was drilling limey shale at 3550 feet. This test probably will be taken to 5000 feet.

Gulf Refining Company's Box 1, NW SE Section 11-2n-15e, Clarke County, east central Mississippi, late in the week was drilling gray sand and red shale at 4418 feet, elevation being 221 feet. Tuscaloosa red beds were topped at 4205 feet.

One mile west of the limits of production in the Jackson gas field Industrial Gas and Electric Company's Illinois Central Railroad 1, NE SE Section 4-5-1e, Hinds County, topped the Midway black shale overlying the chalk where gas production in Jackson is found, at depth of approximately 2360 feet; elevation is 279.5 feet.

Shreveport.—The Texas Company's Stille 3, NW SW Section 33-8-11, Sabine Parish, half a mile north of production in the southeast part of the Zwolle field, came in Monday, May 11, without bailing, flowing at an estimated rate of 500 barrels of oil daily through five-eighths-inch choke, from chalk at total depth of 2318 feet. Zwolle marl was topped at 2230 feet and chalk at 2277 feet, 6⅝-inch casing having been cemented at 2225 feet.

NORTHERN MEXICO NOTES

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Mier Structure Well Going Deeper After Testing Gas

Laredo, Texas.—Ohio-Mexico Oil Corporation was reported to be drilling deeper at the middle of this week after making a drill stem test of a gas sand in its Number 1 wildcat on the Mier structure, state of Tamaulipas, northern Mexico, eight miles south of Roma, Texas, and about 16 miles west and a little south of Rio Grande City, Texas.

On the drill stem test, which was made after drilling into gas-showing sand at 1307 feet, the well is reported to have developed 600 pounds pressure, and potential gas production was estimated at 6,000,000 cubic feet daily. The gas sand was found shortly after drilling was resumed following cementing of 12½-inch casing at 1268 feet.

Mercedes Abandons Chapa Wildcat in Nuevo Leon

Monterrey, Nuevo Leon, Mexico.—Compania de Petroleo Mercedes has abandoned its wildcat, Chapa 1, located 4½ miles west of General Trevino and seven miles south of Agualeguas, state of Nuevo Leon, northern Mexico. No important showings were reported in this test, which reached a final depth of 5003 feet.

The well was drilled with cable tools. It was located along a pronounced faulted and folded zone. Last casing which was set was a string of 10-inch, which was run to 3700 feet.

Plans Made to Set Casing In Ochoa Structure Test

McAllen, Texas.—San Juan Drilling Company, which is drilling the test, San Juan 1, on Ochoa or Pescado structure, northern Tamaulipas, Mexico, about 15 miles south of Roma, Texas, is reported to have been re-financed, and it is understood the company plans to set casing in the mentioned well, which has total depth of 4050 feet.

At that depth the well is reported to have encountered a sand which is believed by the owners to be capable of developing commercial production.

This well is 300 feet northeast of a productive well, Nacionales 201, drilled by Control de Administracion del Petroleo Nacionales, an operating concern controlled by the federal government of Mexico. While it yielded some high gravity oil, that well was not successfully completed as a commercial producer.

San Juan 1 of San Juan Drilling Company also had a gas sand at 3546-3580 feet which showed 600 pounds pressure on drill stem test, that gas sand being at approximately the same depth as the oil horizon found in Nacionales 201 of the "Control."

Albuquerque, N. M.—New Mexico Producing & Refining Company is starting up its operation on the Mesa Leon structure, western Gaudalupe County, east central New Mexico. This is to be a unit operation, permission for development of the structure only recently having been granted by the Secretary of the Interior. Contract is let for a 4500-foot hole, if this depth should be necessary, to Eppenauer Drilling Company of San Angelo, Texas.

Abandon Salado Arch Test in Northern Nuevo Leon, Mexico

Monterrey, Nuevo Leon, Mexico.—The wildcat test, Camaron 1, of Control de Administracion del Petroleo Nacionales (Administrative Control of National Petroleum) on the Salado Arch in northern Nuevo Leon, Mexico, has been abandoned as a dry hole at 5335 feet.

The test was located on the north end of the Escalera-Aldamas Terrace, a major geological feature of this portion of Northern Mexico, at a point near Camaron station on the Laredo-Monterrey branch of the National Railways of Mexico.

The test started in Papagayos (Upper Cretaceous) shale, and oil and gas showing was reported in that same formation at 2110 feet after 10-inch casing had been set at 1750 feet. Subsequently, after drilling ahead, a string of 6⅝-inch casing was set at 3310 feet. Controle de Administracion del Petroles is a concern controlled by the Federal Government of Mexico.

Drilling at 3690 Feet in Tamaulipas Wildcat Test

Monterrey, Nuevo Leon, Mexico.—Compania de Petroleo Mercedes, one of the larger concession owners in Northern Mexico, was drilling a few days ago at 3690 feet in its wildcat, Rio Bravo 3, located in the State of Tamaulipas, 17 miles due south of Sam Fordyce, Texas, and about equally distant southwest of Reynosa, border town in Northern Mexico.

This well about six weeks ago cored sand at 2068-2071 feet which had considerable showing of gas, but an attempt to test the sand with drill stem tester failed when the tester seat broke. A tall steel derrick and heavy, modern rotary drilling equipment are being used on this wildcat test.

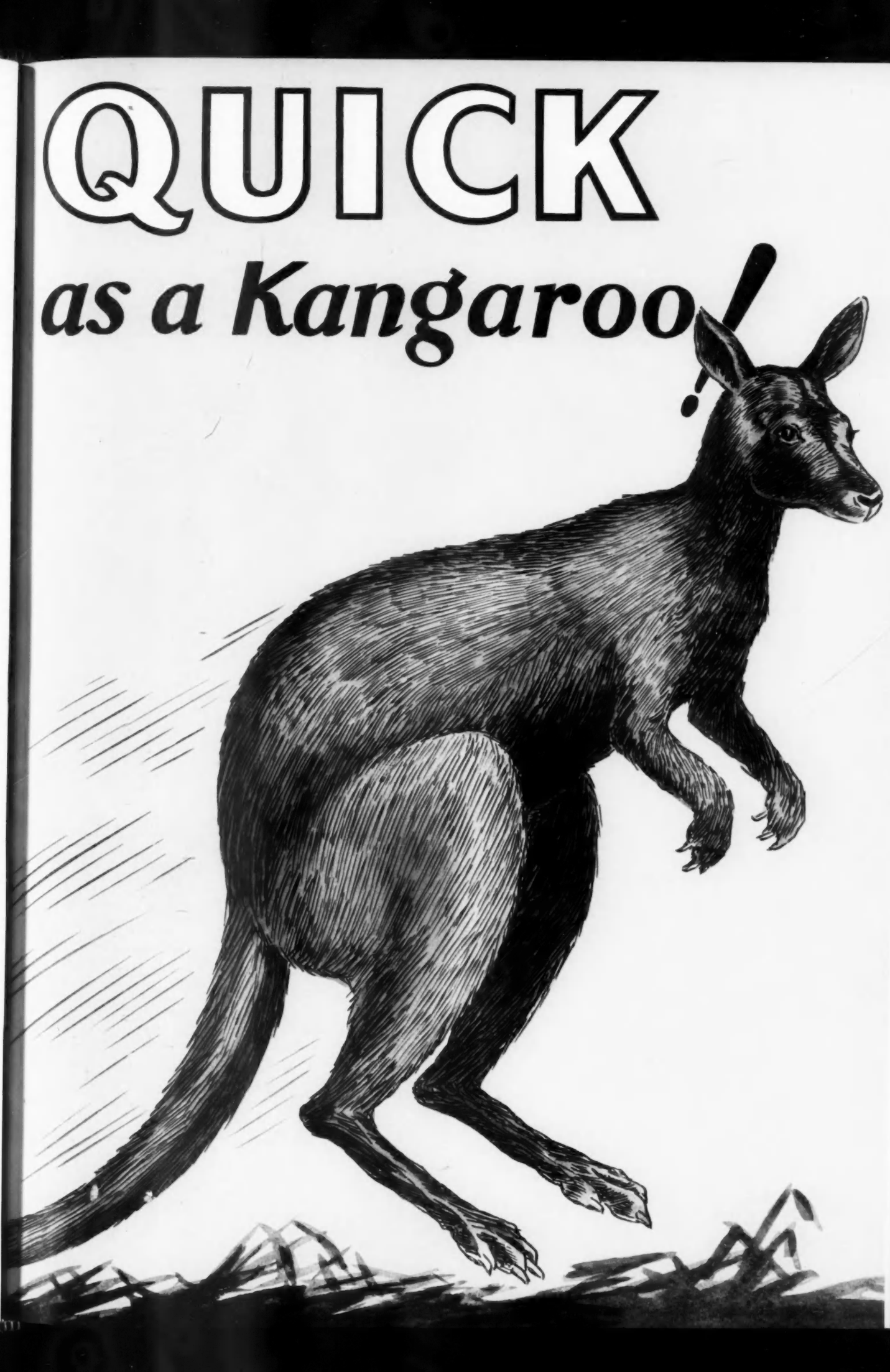
Monterrey, Nuevo Leon, Mexico.—Ohio-Mexico Oil Corporation is fishing for drilling bit at 2949 feet in its wildcat, Number 1, located on the North Aldamas anticline, Northern Mexico.

Great Falls, Mont.—Gas franchises in the towns of Polson and Ronan, in Lake County, northwestern Montana, are being sought by Northwest States Utilities Company, subsidiary to Minnesota Northern Power Company, which plans to take gas from the Drumheller holdings in the Cut Bank territory to northwestern Montana and Idaho communities. Franchises are already obtained in St. Ignatius, Columbia Falls, Whitefish, Kalispell, and Missoula. Northwest States Utilities Company agrees to have its line in operation within two years after the award of franchises. Northwest States Utilities Company has been prominent for the last several years in the gas distribution to eastern Montana, North and South Dakota, and Wyoming communities. This year marks its initial work in the western part of Montana.

Jackson, Mississippi.—Aberdeen, Mississippi, within the next few days will get gas from the Amory gas field, 20 miles away, final details for tieing in a six-inch gas line of Mississippi Public Service Company having been completed during the last week. A dispute over franchises had held up completion of the line since last fall. Aberdeen has a population of approximately 5000.

QUICK

as a Kangaroo!



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Our Watchword QUICK SERVICE

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Completions for Past Week in U. S. Fields

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CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
KETTLEMAN HILLS—		
Petroleum Securities Co., Felix 1	14,000	8110
BELRIDGE—		
Union Oil Co., Belridge 17	300	5540
LONG BEACH—		
Dukette & Pellissier, No. 1	50	7610
PLAYA DEL REY—		
Barnsdall Oil Co., Burks 7	150	3850
Del Oro Oil Co., Cain 1	100	6100
Nile Oil Co., Venice 1	200	5720
SANTA FE SPRINGS—		
General Pet. Corp., Santa Fe Comm. 185E	100	8000
Santa Fe Comm. 207	200	7870
Union Oil Co., Bell 33	1300	5400
VENTURA AVENUE—		
Shell Oil Co., Taylor 59	2000	7125
Taylor 66	2200	5857
Taylor 65	1000	5785
Associated Oil Co., Lloyd 104	600	7182

KANSAS

COWLEY COUNTY—		
G. W. Long et al, Carlisle 1, sw se se 35-34-3e	*	2260
McPHERSON COUNTY—		
United Pet. Co. and Shell, Smith 1, nw c 29-19-1w	1930	3416
Darby Pet. Corp., Fletcer 1, sw c 16-19-1w	¶29	2914
Wakefield and Shell, Koehn 1, ne c nw 36-19-2w	1720	2920
Lario O&G and Shell Pet., Locquement 1, nw sw ne 6-20-1w	1555	3404
Madison and Shell, Peterson 1, c se sw 1-19-2w	*	3573
Russell 1, c sw se, 1-19-2w	*	3050
SEDGWICK COUNTY—		
Jones and Shell, Lygrisse 1, ne c sw 15-26-2e	590	3200
STEVENS COUNTY—		
Texas Interstate Pipe Line Co. et al, Greenwood 1, c sw 12-34-38w	¶4	2620

OKLAHOMA

CARTER COUNTY—		
Magnolia Pet. Co., Burton 1, nw se nw 30-1s-2w	*	4150
Carter Oil Co., Taylor 1, sw nw nw 19-1s-2w	*	2093
Lewis Sikes et al, Hopson 1, ne nw ne 25-1s-3w	*	2622
COTTON COUNTY—		
Colbert and Cole, Thompson 1, se c nw sw 28-2s-11w	*	2208
GRADY COUNTY—		
Okla. Gas Utilities, Fidelity 2, se ne se 26-4n-82	¶23½	1866
HASKELL COUNTY—		
I. T. I. O. et al, Hollaman 1, c sw ne 23-11-21e	*	2002
JEFFERSON COUNTY—		
C. D. Chenault, Groves 1, ne nw sw 23-7s-6w	*	1801
LATIMER COUNTY—		
Limestone O&G, Kilpatrick 1, c se se 16-5-18e	¶8	2715
MUSKOGEE COUNTY—		
A. Degan, Kerr 1, c sw ne 18-12-19e	*	1000
OKLAHOMA COUNTY—		
Shaffer et al, Giles 1, ne c sw, 15-11-3w	4 hrs. 7185	6390
OKMULGEE COUNTY—		
Denton and Marshall, Rentie 1, se c sw se 5-14-14e	*	1796
PITTSBURG COUNTY—		
Utilities Producing Co., Bascom 3, se c sw 10-7-18e	¶20	1811
SEMINOLE COUNTY—		
Magnolia Petroleum Co., Whitney 1, nw sw se 24-5n-7e	*	4291
STEPHENS COUNTY—		
Carter Oil Co., Florence 1, nw c ne 11-3s-6w	*	3294

For Tabulation and Comparison See Market Section

Company, Well and Location	Initial Production Bbls.	Depth
TULSA COUNTY—		
Baxter et al, Ellinghausen 1, sw c ne 12-16-13e	¶½	925
WAGONER COUNTY—		
Keener O&G, Harrison 1, sw c ne 18-19-16e	*	690

EASTERN STATES

NEW YORK

SCHUYLER COUNTY—		
Wittmer Oil & Gas Co., Wayne 1	¶12½	....

WEST VIRGINIA

WETZEL COUNTY—		
Manufacturers Light & Heat Co., Bartrug 3478	¶1	3230
PLEASANTS COUNTY—		
First National Bank of St. Marys, Boyd Hrs. 7	1	....
CLAY COUNTY—		
H. B. Davenport, Thompson Land Co. 3	¶¼	1899
CALHOUN COUNTY—		
Hope Natural Gas Co., Shaffer 7518	¶¼	2094
Creed Barker, St. Paul Church lot 1	*	2080
BOONE COUNTY—		
Pure Oil Co., Federal Coal Co. 51	¶¾	2508
Sutphin 4	¶½	....
Godfrey L. Cabot, Federal Coal Co. 42	¶½	3329
Federal Coal Co. 45	¶½	6117
Arbogast 8	¶¾	2325
Youghiogheny-Ohio Coal Co. 7	*	3015

SOUTHEASTERN OHIO

WASHINGTON COUNTY—		
Macksburg Oil Co., Dutton 1	2	312
John Buckley & Co., Thomas 1	5	....
NOBLE COUNTY—		
C. W. Rich & Co., Rich 2	2	1461
JEFFERSON COUNTY—		
Elliott & Co., Elliott 1	*	1300

CENTRAL OHIO

ASHLAND COUNTY—		
Ohio Fuel Gas, Welch 2	¶¼	....
Appalachian Gas Corp., Welch 1	*	2945
MEDINA COUNTY—		
Ohio Fuel Gas Co., Gates 1	2	....
COSHOCTON COUNTY—		
Ohio Fuel Gas Co., Cochran 1	¶3	....

NORTHWESTERN OHIO

HANCOCK COUNTY—		
Ridge Oil & Gas Syndicate 5	70	....
HENRY COUNTY—		
Henry County Oil & Gas Co., Fiser 1	¶1	....

INDIANA

MONROE COUNTY—		
Ohio Oil Co., Neal 1	¶1	799

KENTUCKY

HENDERSON COUNTY—		
Christian & Schmitt, Walker 4	5	....
McLEAN COUNTY—		
Ellis & Young, Turner 1	¶¼	3520
Cameron, Thompson & Co., Wilhite 2	50	....

MICHIGAN

ISABELLA COUNTY—		
Ohio Producing & Refg. Co., Wezensky 2	400	3600

ARKANSAS

UNION COUNTY (Champagnolle)—		
Ohio Oil Co., R. Furlong 3, 12-17-14	722	3013

MISSISSIPPI

HINDS COUNTY (Jackson Dist.)—		
Pirtle & Flint, Frank Payne 1, 27-6-1e	*	2567

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH (Elm Grove)—		
United Gas Pub. Ser. Co., Murff 2, 34-17-12	¶8¾	1770
RICHLAND PARISH—		
Southern Carbon Co., Rosengrant & Ducomb 1, 24-17-5e	¶24	2430
United Carbon Co., Mann 1, 12-16-5e	¶12½	2450
UNION PARISH—		
Fred A. Green, U. S. Govt. 1, 26-30-3e	¶7	2166
COMPLETIONS		K

LOUISIANA GULF COAST

SULPHUR—		
Union Sulphur Co., Fee 766	1500	4967

TEXAS GULF COAST

BARBERS HILL—		
The Texas Co., Wilburn 5	*	1323
Mills Bennett Prod. Co., Gulf Smith 1	745	5681
Humphreys Corp., Winfree 4	1900	5604
BRYAN MOUND—		
Freeport Sulphur Co., Fee 2001	*	5260
GAY HILL—		
Sun Oil Co., Schlottman 3	*	1809
HUMBLE—		
Sun Oil Co., Bender 22	*	4564
NACOGDOCHES COUNTY—		
John Starks et al, Langford 1	*	3879
NASH DOME—		
Thos. Faust et al, Fee 6	*	6515
WASHINGTON COUNTY—		
Cord Oil Co., Hahn 1	*	1885
WHARTON COUNTY—		
Poole & Chappel, Poole 1	*	550

EAST TEXAS

JOINER FIELD—		
Berry Lewis & Co., A. J. Deason (5-ac) 1	3500	3710
Big Indian Oil Co., Deason 1	*	2655
C. P. Oil Co. (Roy I. Carter), Giles 2	3500	3759
Cranfill-Reynolds Co., Cox 1	4000	3712
East Texas Ref. Co., Ras Pool 1	5000	3730
Federated Oil Co., M. Alford 3,	400	3671
D. S. Golding & Clint W. Murchison, M. L. Thompson 1	10,000	3742
Gulf Coast Oil Co., Giles 2	2500	3755
John W. Hoosier et al, Toliver 1	2000	3710
Humble O&R Co., Kangerga 3	3500	3732
Kangerga 4	5000	3722
H. L. Hunt & Graddy H. Vaughn, Young 3	3000	3760
H. L. Hunt et al, W. R. Fair 1	5000	3707
E. C. Laster, Inc., et al, J. P. Maxwell 1	1500	3733
G. G. McIntyre Drlg. Co., M. L. Thompson 1	10,000	3752
H. S. Moss & J. E. Urschell, M. Alford 2	750	3750
Roeser-Pendleton, Inc., Glenn Pool 1	5000	3740
Sinclair O&G Co., W. D. Kinney 1	7000	3675
Sun Oil Co., Selman 2	12,000	3708
Tidal Oil Co., A. P. Finney 2	4500	3643
Tulsa Oil Co., Kangerga 1	12,000	3666
Turman Oil Co., C. Young 2	4000	3709
Graddy H. Vaughn et al, C. Young 2	2500	3750
Ward Oil Corp.-J. R. Elliott & R. A. Johnston, Finney 1	4000	3720
W. C. Wolf & W. G. Ray Drlg. Co., J. P. Wilson 1	*	3667
KILGORE FIELD—		
Beard & Hammond, Inc., J. S. Bean 1	7500	3706
C. P. Burton Drlg. Co. et al, Florey 2	6000	3673
Capitol Drlg. Co. et al, L. Osborne 1	*	4010
Cranfill-Reynolds Co., King-Blackburn 2	7000	3620

(Continued on page 77)

Permits Granted for New Wells

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For Tabulation and Comparison See Market Section

CALIFORNIA

COLUSA COUNTY—William P. Jackson, No. 1, 8-17-3.

KERN COUNTY — Cumberland Oil Co., Cumberland 2, 17-26-18.

LONG BEACH—Covington Oil Co., No. 1, 29-4-12. Cooperative Pet. Co., No. 1, 30-4-12.

PLAYA DEL REY—Union Oil Co., Del Rey 3, 28-2-15.

POTRERO—Taylor Oil Co., No. 2, 28-2-14.

ORANGE COUNTY — Whittier Santa Fe Springs Oil Synd., No. 1, 20-5-11. H. Cohen, Cohen 1, 20-5-11; Cohen 2, 20-5-11; Cohen 3, 20-5-11; Cohen 4, 20-5-11.

OKLAHOMA

CREEK COUNTY—Penmar Oil Co., Tiger 3, (owd) nw c sw nw 26-17-11e. Krasne Drlg. Co., Harry 2 (owd), se c sw se 4-17-11e.

GRADY COUNTY—J. B. Nichols, Williams 1, c s/2 s/2 24-4n-8w.

LEFLORE COUNTY — Sooner O&G Co., Peck 1, se sw se 22-7-26 east.

MUSKOGEE COUNTY—H. L. Jolly, Apaulding 2 (owd) ne se ne, 8-15-18e. Braman Oil Co., Brown 1, se ne ne 18-13-16e. Braman Oil Co., Jackson 5, sw c se nw 17-13-16e.

OKFUSKEE COUNTY—F. A. Havel, Likowske 1a, csl ne sw, 23-11-11e.

OKLAHOMA COUNTY — Skelly Oil Co., Gibson 1, nw c sw ne 10-11-3w. Shaffer et al, Eggleston 1, nw c ne nw sw 10-11-3w.

PITTSBURG COUNTY—Utilities Producing Co., Vail 2, ne c se se 8-7-18e.

PONTOTOC COUNTY — Stanolind O&G, Haynes 2 "B", ne c sw 32-5-5e.

SEMINOLE COUNTY—Empire O&G, Jackson 1, c sw sw, 17-7-8e.

WAGONER COUNTY — Hartman et al, Sarty 1a, nw c se sw nw 7-17-16e.

KANSAS

CHASE COUNTY—Kingwood Oil Co., Elliston 2, c se se 21-19-6e.

COWLEY COUNTY—Lehman et al, Hill 1, se c ne 27-33-4e.

McPHERSON COUNTY—Abilene Oil Co., and Shell, Lewis 1, se c 20-19-1w. Abilene Oil Co. and Shell, Garrett 2, ne c 30-19-1w. Abilene Oil Co. and Shell, Anderson 4, nw ne nw 30-19-1w. Abilene Oil Co. and Shell, Anderson 3, sw c nw 30-19-1w. Darby Pet. Corp. and Shell, Kaegi 3, sw se ne 20-19-1w. Darby Pet. Corp. and Shell, Kaegi 2, se sw ne 30-19-12. Abilene Oil Co. and Shell, Hindmarsh 1, sw c 20-19-1w. Mid-Kansas O&G, Unruh 1, se c sw 25-19-2w. Gypsy Oil Co., Stucky 2, (owd) ne sw se 33-20-3w. Lario O&G and Shell, Miller "B" 1, ne se nw 6-20-1w. Washoma Pet. Co. and Shell, Meek 1, (owd) nw ne sw 7-20-1w.

RUSH COUNTY—Deep Rock Oil Corp. et al, Koril 1, c nw, 23-18-16w.

STEVENS COUNTY—Kenny Coastal et al, Baldridge 1, c ne 10-35-39w. Texas Interstate Pipe Line Co. et al, Gregory 1, c ne 14-34-38w. Texas Interstate Pipe Line Co., Spikes 1, c ne, 2-33-38w.

TEXAS

ARCHER COUNTY—T. F. Hunter, Wichita Falls, Hausler, 1, S. G. Hardaway sur, 450 ft from s and 1536 ft from e line. Perkins & Cullum, Wichita Falls, D, 83, 1, B 3, FCSL sur, 6438 ft from w and 150 ft from s line.

BEXAR COUNTY—Camp & Humble O&R Co., San Antonio, R. H. Chavez, 200, 1, S 46, J. Montez sur, 1900 ft from s and 150 ft from e line. Gatlin Oil Co., San Antonio, I. A. Beck, 279, 7, Montez sur, 150 ft from sw and 1351 ft from se line.

BROOKS COUNTY — I. K. Howeth, Beeville. W. Singer, 960, 1, S. Alcorn sur, 2997 ft from n and 76 ft from w line of Blk. 436.

CALLAHAN COUNTY—M. D. Heist, Putnam, M. Hughes, 100, 14, S 16, D&D Asy. sur, 600 ft from n and 150 ft from e line. Roy Guffy et al, Baird, E. L. Finley, 60, 1, S 72, Bayland Asy. sur, 150 ft from w and 900 ft from s line.

CARSON COUNTY—Texas Interstate Pipe Line Co., Amarillo, B. Heydrick, 1, S 60, B 5, I&GN sur, 1333 ft from n and 1338 ft from w li sec.

CASS COUNTY—R. G. Baker, Fort Worth, W. R. Caver, 75, 1, J. Lick sur, 450 ft from e and 150 ft from s line.

CHAMBERS COUNTY—Humphreys Corp., Houston, E. H. Winfree, 10, 6, W. D. Smith sur, 50 ft from s and w lines. Sun Oil Co., Beaumont, Wilburn, 20, 14A, Wm. Hodge sur, 50 ft from s and 60 ft from w line.

CHEROKEE COUNTY—Fain-McGaha Oil Corp., Wichita Falls, W. A. Shaw, 128, 1, I. Reed sur, 1400 ft from e and 990 ft from s line.

COOKE COUNTY—Faith Oil Corp., Wichita Falls, J. F. Bugg, 150, 2, H. Nail sur, 450 ft from n and 1500 ft from w line.

COLEMAN COUNTY—Otto Engel, Santa Anna, J. L. Stewardson, 80, 1, S 91, ET Ry. sur, 150 ft from w and 550 ft from s li sec.

FRESSTONE COUNTY—E. L. Smith Oil Co., Mexia, E. Jackson, 300, 1, W. Carter sur, north central part of lease.

GREGG COUNTY—Corley & Blair, Longview, Bumpas, 15, 1, W. H. Castleberry sur, 150 ft from s and e lines. Reiger, Steholl et al, Amarillo, Byrd-Frost, Inc., Longview, J. B. Watson, 9, 1, J. S. Caruthers sur, 150 ft from s and w lines. Cranfill & Reynolds, Houston, S. S. Barton, 46, 1, D. Sanchez sur, 250 ft from w and 256 from n line. Shelby O&G Co., Tulsa, H. R. Snavely, 118, 1, J. R. Crosby sur, 250 ft from s and e lines. Sinclair O&G Co., Fort Worth, M. T. Cole, 640, 3, No. 110, S. Brooks sur, 2589 ft from n and 300 ft from e li sur; 2, 3390 ft from n and 191 ft from e line survey. Barnsdall & Houston Oil Co., Houston, J. G. McGrede, 109, 1, D. Sanchel sur, 229 ft from w and 150 ft from s line. Mid-Kansas O&G Co., Shreveport, J. J. Castleberry, 202, D. Sanchez sur, 110 ft from w and 730 ft from s line. M. B. Hughes, 200, 1, J. Hillard sur, 150 ft from n and w lines. Prairie O&G Co., Ranger, J. Elder, 47, 1, McCurry sur, 150 ft from e and 330 ft from s line. Humble O&R Co., Houston, D. Johnson, 62, 1, J. R. Crosby sur, 150 ft from w and 2165 ft from s line. T. H. P. Duncan, Fort Worth, B. A. Duncan, 20, 1, G. F. Penn sur, 768 ft from e and 424 ft from s line. Republic Prod. Co., Longview, C. Fisher, 50, 2, J. Ruddle sur, 200 ft from n and w lines. Mid-Kansas O&G Co., Tulsa, E. M. Nettleton, 100, 2, J. Ruddle sur, 720 ft w of No. 1. David-Mason Synd., Dallas, W. S. Pryor, 50, 1, H. McNutt sur, 455 ft from w and 150 ft from e line. Feazel Dev. Co., Tyler, I. L. Kinney, 40, 1, B 36, J. B. Cadona sur, 450 ft from n and 150 ft from e line. Phillips Oil Operators, Longview, R. Deason, 5, 4, I. Ximinez sur, center; 3, south of No. 4. Mid-Kansas O&G Co., Shreveport, M. G. Barton, 193, 2, S. P. Hollingsworth sur, 810 ft from n and 150 ft from w line. Arkansas Fuel Oil Co., Shreveport, G. A. Castleberry, 52, 1, D. Sanchez sur, 250 ft from s and w lines. J. C. McKinley, 87, 1, G. W. Hooper sur, 175 ft from n and 250 ft from e line. Cranfill & Reynolds Oil Co., Houston, S. Scott, 37, 1, D. Dainwood sur, 430 ft from n and 273 ft from e line; Clayton, 40, 1, L. B. Outlaw sur, 320 ft from n and w lines. Weaver-Crim Oil Corp., Longview, B. Laird, 82, 2, W. P. Chisum sur, 1321 ft se of No. 4; 3, 435 ft se of No. 4; 4, 175 ft from w and 150 ft from n line. Sinclair O&G Co., Fort Worth, M. Moncrief, 252, 1, W. H. Castleberry sur, 840 ft from n and 168 ft from w line. Cranfill & Reynolds Oil Co., Houston, D. A. Porter, 100, 1, G. W. Hooper sur, 330 ft from s and e lines; M. Hays, 551, 1, W. C. Alvice sur, 330 ft from n and e lines; R. L. Martin, 40, 1, W. R. Chisum sur, 150 ft from s and e lines. Sun Oil Co., Dallas, M. V. Satterwhite, 82, 1, W. H. Castleberry sur, 250 ft from s and w lines. Gulf Prod. Co., Houston, M. O. Shepperd, 335, 1, G. R. Rains sur, 330 ft from s and e lines; A. Spear, 81, 3, W. P. Chisum sur, 150 ft from n and w lines J. S. King;, 26, 1, W. P. Chisum sur, 330 ft from n and e lines. Magnolia Pet. Co., Dallas, M. B. Hughey, 80, 1, W. McCurry sur, 330 ft from n and w lines. Whittle & Cavanaugh et al, Houston, B. Watson, 7, 1, J. S. Caruthers sur, 150 ft from n and 160 ft from w line. R. S. Rushing, El Dorado, Ark., J. M. Dickson, 16, 1, Wm. Chisum sur, 155 ft from n and e lines. Woodley Pet. Co., Shreveport, L. Walker, 45, 1, Wm. Robinson sur, 230 ft from s and 280 ft from e line. Yount-Lee Oil Co., Beaumont, McKinley, 84, B1, D. Sanchez sur, 742 ft from s and 3275 ft from w li of survey; G. Fenton, 15, B1, D. Sanchez sur, 167 ft from s and 5625 ft from w line of survey. Walker & Harrison, Gladewater, Walker, 50, 1, M. Dillard sur, 150 ft from n and w lines. Foree & Shasta Oil Co., Longview, A. Fenton, 17, 1, Sanchez sur, 232 ft from e and 272 ft from s line. Humble O&R Co., Houston, A. Carter, 92, 1, D. Ferguson sur, 780 ft from s and 150 ft from w line; T. M. Armstrong, 60, 1, L. J. Rigsby sur, 1353 ft from n and 150 ft from e line; H. M. Lawrence, 100, 1, D. Ferguson sur, 540 ft from n and 219 ft from w line.

GRAY COUNTY—Reiger, Steholl et al, Amarillo, M. Davidson, 160, 1, S 64, B B2, H&GN sur, 660 ft from n and w lines of sec; Graham, Cree & Hover, Amarillo, Delmar, 160, 1, S 105, B 3, I&GN sur, 330 ft from s and w lines.

HARRIS COUNTY — Sun Oil Co., Beaumont, E. L. Bender, 2000, 24, W. B. Adams sur, 206 ft ne of No. 15; 16, 300 ft e of No. 15. Cypress Oil & Dev. Co., Houston, C. Fritz, 463, 1, J. Duckworth sur, 500 ft from n and e lines of survey. Rio Bravo Oil Co., Houston, HE&WT, 2, W. B. Adams sur, center.

HARRISON COUNTY — Everts Drilling Co., Wichita Falls, R. L. Syppert, 40, 1, R. Hooper sur, 150 ft from n and w lines.

HENDERSON COUNTY — Arcadia Refg. Co., Coleman, J. N. Dean, 42, 1, S. Boone sur, 160 ft from n and 150 ft from e line.

HOUSTON COUNTY — Mineral Research Corp., Houston, G. L. Murray, 2500, 1, J. Durst sur, 620 ft w of center of e line.

JACKSON COUNTY—Chicago Gulf Corp., Edna, L. Rogers, 200, 1, N. Rodriguez sur, se corner of Blk 14.

McMULLEN COUNTY—Jno. F. Camp, San Antonio, J. Murphy, 640, 1, S 123, AB&M sur, 165 ft from n and 1845 ft from w line.

MOORE COUNTY—Magnolia Pet. Co., Dallas, C. R. James, 320, 1, S 170, B 33, T&NO sur, 330 ft from n and e lines.

NACOGDOCHES COUNTY — Foreman & Weller, Nacogdoches, B. B. Stanley, 73, 1, J. I. Y'Barbo sur, 420 ft from s and 690 ft from e line.

NUECES COUNTY—Gulf Coast Oil Corp., Houston, M. Harrell, 40, 1, H. B. Shepard sur, 350 ft from s and e lines of lot 32.

PECOS COUNTY—Cosby Prod. & Royalty Co., Fort Worth, J. H. Tippett, 160, 1, S 40, B 194, GC&SF sur, 990 ft from s and w lines.

RUSK COUNTY—Gulf Prod. Co., Houston, E. E. Thrash, 83, 4, F. Cordova sur, 150 ft n of center of s line; 3, 150 ft from n and e lines; W. Shaw, A, 67, 2, F. Cordova sur, 330 ft from n and e lines; A. Laird, 60, 3, W. P. Chisum sur, 197 ft from w and 108 ft from n line. W. W. Holland, Overton, Mrs. F. E. Strain, 6, 1, T. C. Loyd sur, 150 ft from s and e lines; Fee, 40, 2, J. Lindley sur, 150 ft from n and e lines. Republic Prod. Co., Longview, N. Bean, 8, 1, Ruddle-Lewis sur, 250 ft from n and 167 ft from w line; B. F. Hindman, 23, 2, R. W. Smith sur, 150 ft from n

and w lines. Tidal Oil Co., Fort Worth, S. S. Laird, 18, 1, J. McKim sur, 275 ft from n and 308 ft from e line. Humble O&R Co., Houston, S. S. Laird, 230, A5, I. Ruddle sur, 315 ft ft from e and 936 ft from s line; A. Wilson, 58, 1, Geo. Berry sur, 330 ft from s and w lines; S. S. Laird, 127, B 3, J. Lewis sur, 170 ft from w and 492 ft from s line; M. Kangera, 90, 7, M. J. Pru sur, 510 ft from s and 150 ft from w line; L. D. Crim, 628, 21, E. G. Sevier sur, 1807 ft from s and 150 ft from e line H. L. Hunt, Henderson, S. S. Plowman, 40, 1, F. Cordova sur, 315 ft from n and e lines; I. R. Thrash, 57, 1, F. Cordova sur, 315 ft from e and 985 ft from n line; H. C. Maxwell, 107, 2, F. Cordova sur, 200 ft from s and 150 ft from e line. Sun Oil Co., Dallas, R. Schuler, 50, 1, J. B. Cadena sur, 200 ft from s and w lines. Rector & Davidson, Dallas, W. P. Brightwell, 2, 1, R. E. Winn sur, 150 ft from n and w lines. East Texas Ref. Co. Dallas, R. Pool, 30, 1, M. J. Pru sur, 200 ft from s and w lines. Imperator Oil Corp., Dallas, F. J. Cox, 10, 1, R. H. Penney sur, 150 ft from n and e lines. Houston Oil Co. & Jones, San Antonio, J. M. Crim, 4, H. Hobson sur, 300 ft from e and 150 ft from s line. Arkansas Fuel Oil Co., Shreveport, J. W. Wheelis, 81, 1, R. H. Penney sur, 200 ft from n and e lines. Louisiana O&R Co., Shreveport, H. Mayfield, 40, 1, H. Hobson sur, 200 ft from n and 150 ft from w line. R. H. Dearing & Sons, Dallas, T. H. Goforth, 40, 1, Tutt-Lindley sur, 150 ft from s and w lines. Paul Vitek, Fort Worth, Eaton, 3, 4, F. Cordova sur, 150 ft from s and e lines. Eaton 13, 3, F. Cordova sur, 150 ft from n and w lines; G. W. Eaton, 50, 2, F. Cordova sur, 234 ft from w and 200 ft from s line. Cordova-Union Oil Corp,. Fort Worth, C. O. Christian, 36, 6, R. E. Winn sur, 150 ft from s and w lnies. Pilot Oil Co., Dallas, M. A. Thrash, 30, 1, F. Cordova sur, 203 ft from n and 291 ft from w line. Devonian Oil Co. ¼ Barnsdall Oil Co., Tulsa, J. B. Milstead, 83, 2, Penney & Collard sur, 630 ft nw of No. 1, Miller & McKinzie, Tyler, W. P. Keeling, 4, 1, F. Cordova sur, 183 ft from n and 300 ft from w line. Valentine Smith, Mexia, Wm. Stone, 119, 1, Campbell & Shaw sur, 330 ft from s and e lines. Navarro Oil Co., Houston, J. N. Peterson, 40, 2, I. Ruddle sur, 150 ft from n and w lines; R. N. Brightwell, 107, 3, Winn-Y'Barbo sur, 165 ft from w and 150 ft from s line. Clarke W. Clarke, Dallas, F. J. Cox, 10, 1, R. H. Penney sur, 150 ft from s and w lines. Lide-Rowe Oil Co., Inc., Shreveport, C. V. Young, 30, 2, M. J. Pru sur, 150 ft from s and w lines. Texas Co., Houston, J. D. Stone, 50, 1, M. J. Pru sur, 330 ft from n and e lines. Snowden & McSweeney Co., Fort Worth, R. H. Laird, 133, 3, Chisum-Ruddle sur, 326 ft from n and 1531 ft from e line; F. Bean, 39, 2, H. Hobson sur, 150 ft from s and w lines.

REFUGIO COUNTY—W. L. Pearson Properties, Inc., Corpus Christi, Ryals, 52, 5, Refugio sur No. 2, 475 ft e of No. 3.

SMITH COUNTY—Magnolia Pet. Co., Dallas, J. R. Wright, 166, 1, J. Vargas sur, 150 ft from n and w lines. W. B. Hamilton et al, Wichita Falls, Gambrell, 54, 1, R. McAnulty sur, 190 ft from s and w lines. Sinclair O&G Co., Fort Worth, W. B. Jarvis, B, 116, 1, J. Vargas sur, 250 ft from s and 720 ft from e line. Sun Oil Co., Dallas, A. V. Ritch, 99, 1, J. Vargas sur, 205 ft from n and 300 ft from w line.

VAN ZANDT COUNTY—Clifford Oil Co., Inc., Dallas, H. F. Haake, 100, 1, Hanks & Collins sur, 450 ft from w and 150 ft from s line. Pure Oil Co., Fort Worth, C. H. Cameron, 4, 5, J. Walling sur, 70 ft from n and 150 ft from e line.

WHARTON COUNTY—Rose Texas Oil Co., Rosenberg, M. S. Floyd, 32, 1, S. F. Austin sur, 150 ft from s and e lines. Chappell Poole et al, Wharton, W. Poole, 583, 1, S 16, A. S. Fry sur, 207 ft from n and 487 ft from w line.

WILBARGER COUNTY—Staley, Wynne & Co., Wichita Falls, W. T. Waggoner, 80, 1, S 52, B 4, H&TC sur, 150 ft from n and e lines.

WINKLER COUNTY—Lion O&R Co., El Dorado, T. G. Hendrick, A, 160, 10, S 41, B 5, 990 ft from n and e lines of sw¼.

YOUNG COUNTY—Cable Oil Co., Wichita Falls, L. A. Snider, 300, 21, R. Wilcox sur, 400 ft n of No. 8. Jacob O&G Co., Graham, Finch, 40, 1, 32 TE&L sur, 150 ft from n and e lines. King Royalty Co., Wichita Falls, J. F. Larimore, 160, 22, 2246 TE&L sur, 1350 ft from e and 1118 ft from n li s¼. E. C. Reed et al, Graham, E. P. Tatum, 105, 2, 1908 TE&L sur, 599 ft from e and 750 ft from n li sec. W. H. Hammon, Wichita Falls, S. R. Jeffery, B, 50, 1, 42 TE&L sur, 150 ft from s and e lines.

ARKANSAS

COLUMBIA COUNTY—Kendall Oil & Gas Co.'s Rhea, Kitchen & Fullenwider 1, 200 ft s 150 ft w ne cor ne¼ ne¼ 13-17-22.

HOT SPRING COUNTY — The Starr Oil Co.'s Cunningham 1, 600 ft s 276 ft w ne cor ne¼ ne¼ 11-5-16.

UNION COUNTY—Marine Oil Co. et al's Unknown Saw Mill 1, 330 ft e 330 ft n sw cor se¼ se¼ 3-18-13.

LOUISIANA

BOSSIER PARISH—D. L. Perkins, Shreveport, Ardis & Co. 1, 13-15n-11w, 1127 ft n and 198 ft e of sw cor of section. J. W. Glover 1, 23-15n-11w, 660 ft n and 660 ft w of se cor of ne¼.

CADDO PARISH—United Gas Public Service Co., Shreveport, M. K. Smith 1, 35-23n-16w, 660 ft s and 2640 ft w of ne cor of section.

CALCASIEU PARISH—Union Sulphur Co., Sulphur, La., Fee 767, 29-9s-10w, 328 ft e and 180 ft n of center of section.

DE SOTO PARISH—Mansfield Oil & Gas Co., Monroe, La., Wollums 1, 29-12n-12w, 200 ft s and 200 ft w of ne cor sw¼ of sw¼.

SABINE PARISH — Jordan & Co., Inc., Monroe, La., La. Long Leaf Lbr. Co. 2, 3-7n-11w, 200 ft n and 247.5 ft w of se cor sw¼ of se¼. E. M. Self, Tr., Robeline, La., Mitch Jacobs 1, 1-7n-11w, 250 ft e and 50 ft s of nw cor sw¼ of se¼. The Texas Co., Shreveport, La., Mrs. Clementine DeLatin 1, 3-7n-11w, 1070 ft w and 990 ft n of se cor of section.

▼ ▼ COMPLETIONS ▼ ▼

(*Continued from page 75*)

Company, Well and Location	Initial Production Bbls.	Depth
W. H. Dunning & J. H. Markham, Jr., Peterson 4	8500	3662
Gulf Prod. Co., W. P. Brightwell 2	5000	3695
C. M. Griffin 5	9000,	3619
Houston Oil Co. et al, W. P. Brightwell 2	8000	3679
W. P. Brightwell 3	10,000	3649
Dave Ladd 2	8500	3685
S. S. Laird 2	15,000	3653
Houston Prod. Co., W. P. Brightwell 1	12,000	3605
Humble O&R Co., L. D. Crim 15	7500	3663
L. D. Crim 18	7500	3603
L. D. Crim 19	9000	3625
S. S. Laird 3-A	8000	3674
S. S. Laird 4-A	6000	3688
Peterson 3	8000	3600
N. W. Hunter et al, J. R. Buntyn 2.	7500	3701
Ed. M. Jones et al, D. Wills 1	10,000	3676
D. Wills 2	9500	3595
E. M. Jones-Houston Oil Co., J. M. Crim 3-B	9000	3696
C. C. Julian Oil & Royalty Co., J. M. England 1	9000	3661
Magnolia Pet. Co., M. E. Peterson 1	15,000	3608
Mazda Oil Corp., Cotton 1	16,000	3670
J. G. Oliphant et al, W. Smith 1.	12,000	3593
Shell Pet. Corp., J. A. Knowles 1.	8000	3658
J. B. Watson 1	7500	3652
H. R. Smith-Gulf Prod. Co., Peterson 3	8000	3649
Stanolind O&G Co., Ben Laird 3.	5000	3670
Texas Unity Oil Co., I&GN Ry. fee 1	7500	3600
Tidal Oil Co., M. R. Terrell 2	1200	3601
Sam K. Vierson et al, Geo. Muckelroy 1	9600	3586
Weaver-Crim Corp., Ben Laird 1	15,000	3601
Westheimer-Daube-Cox & Hamon Peterson 3	10,000	3739
Woodley Pet. Co., Thompson 1	11,000	3683
LONGVIEW FIELD—		
Arkansas Fuel Oil Co.-Yount-Lee Oil Co., Lathrop 5-A	10,000	3605
Badgett-Cooper Drlg. Co., C. C. Clemmons 1	12,000	3670
Cranfill-Reynolds Co., McGrede 1.	9600	3646
H. W. Elliott et al, E. G. Andrews 2	12,000	3665
Magnolia Pet. Co., J. C. McKinley 1	10,000	3636
B. E. Rodden 6	15,000	3659
Mudge Oil Co., J. D. Richardson 1	10,000	3743
Shano Oil Co. (was R. L. Force & Shasta Oil Co.) Christian 1	12,000	3611
Stanolind O&G Co.-Simms Oil Co., Harley 1	10,000	3558
VAN FIELD—		
Pure Oil Co., Ella York 6	2000	2917
C. H. Cannon (4-ac) 5	5000	2940
A. G. Maxfield (107.8-ac) 4	*	2993

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Hagy & Harrington, Magnolia fee 1	¶35	2593
Red River Gas Co., Bivins 5-A	¶31	2752
GRAY COUNTY—		
Adams-Prince et al, Morse 1	¶4-100	2512
Magnolia Pet. Co., Eddington 1	60	2898
HUTCHINSON COUNTY—		
Continental Oil Co., Moore 1	140	3085

WEST TEXAS

IRION COUNTY—		
F. E. Webb et al, Nutt 1-A	150	1465
JONES COUNTY—		
Shaheen Oil Co. & Duffey, Chittum 1	*	2110
PECOS COUNTY—		
Cardinal Oil Co., Tippett-Kirby 7-E	240	487
Southern Oil Corp., Tippett-Humble 3	100	511
UPTON COUNTY—		
Bert Weekley Oil Corp., McClintic 2	800	3027
WARD COUNTY—		
Chester Smith et al, Boogher 1	¶3-250	2165
WINKLER COUNTY—		
Magnolia Pet. Co., Bashara 1	*	3481

SOUTH TEXAS

BEE COUNTY—		
Catlett & O'Neill's Miller 1	*	4516
CALDWELL COUNTY—		
Rayor et al's Dunlop	*	2400
REFUGIO COUNTY—		
Moody-Seagraves Prod. Co.'s Shelly 1	50	6456
WEBB COUNTY—		
Carolina Texas O&G Co.'s Barnsley 9	¶15	2575
ZAVALLA COUNTY—		
Texas Gas Utilities Co.'s Pryor 4	*	725
Pryor 5	¶7	676

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr — straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

Wildcat Reports From All Sections

CENTRAL EAST TEXAS

Completions

Company, Well and Location		Initial Production Bbls.	Depth
RUSK COUNTY—			
W. R. Ramsey et al, M. Kangerga 1	*		3883
SMITH COUNTY—			
Ruffin-Kilgore Oil Co., H. Florence 1	*		4025

BOWIE COUNTY—Mayfield Oil Royalties & Devore's R. B. Cooper 1, W. M. Ward sur, elev 360 ft, top Nacatosh 931 ft, dr 1660 ft. Parkington & Jones et al's W. W. Whybark 1, J. H. Dover sur, dk. W. A. Swift-G. W. Hindman & Tom Ball's Roy Merritt 1, Y. S. McKinney sur, sd 3130 ft. Lee J. Timberlake et al's J. M. Tidwell 2, L. M. Rice sur, elev 290 ft, sd after testing salt water 2920-25 ft.

CASS COUNTY—R. G. Baker et al's W. R. Kaver 1, John Lick sur, rig. Hunter et al's Felkner 1, elev 248 ft, Pecan chalk 2373-2860 ft, abn 3708 ft. Geo. B. McCamey et al's R. E. Hall 1, H. Buckler sur, set sur cas. C. E. Murdock et al's G. W. Coody-First Nat'l Bank 1, Evans Watson sur, elev 401 ft, Pecan chalk 2522-2953 ft, top Austin chalk 3490 ft, dr 3645 ft. Morris et al's Henderson 1, Bailey sur, sd 575 ft. Olds-Smith et al's Joe Anthony 1, J. C. Byers sur, dr 1600 ft. Pigg & Davis et al's Ray Bryan 1, Albert Latimer sur, top Nacatosh sur, 1785 ft, sd 1970 ft. John C. Rogers et al's W. Q. Henderson 1, Wm. Davis sur, elev 354 ft, sd 955 ft; Lanier 1, K. A. Welborn sur, elev 366 ft, sd 2275 ft. Smith-Adkisson et al's Wilson 1, J. A. McFarland sur, rig.

CHEROKEE COUNTY—Ben Banner et al's A. S. Lacy 1, J. L. Hogg sur, cem cas 390 ft. D. H. Byrd et al's Fariss 2, elev 215 ft, sd 3860 ft. Fain-McGaha Oil Corp. & Sinclair O&G Co.'s W. A. Shaw 1, I. Reed sur, dr shale 3305 ft. Helen Clair Oil Co.'s Mrs. M. B. Perknis 1, Thos. Sanford sur, rig. E. M. Jones et al's McLee 1, Jas. Knight sur, top Pecan chalk 3138 ft, dr 3200 ft. O. K. Killam et al's W. A. Newton 1, Thos. Quevedo sur, sd 2520 ft. Rowan-Nichols Oil Co. & Tidal Oil Co.'s Ousley 1, T. L. Smith sur, elev 279 ft, Pecan chalk 3138-3533 ft, top Austin chalk 4042 to 4209 ft, top Woodbine sand 4216-25 ft, testing. Wm. A. Stone et al's E. M. Decker 1, Geo. Ruddle League, top chalk 4265 ft, dr chalk 4315 ft. Sinclair O&G Co.'s Martin 1, Larkin Baker sur, dr 3550 ft. Walton Oil Co.'s E. Singleton 1, Tillman Waters sur, sd 2705 ft.

DELTA COUNTY — The Delta Co.'s M. Neatherley 2, J. B. Alexander sur, dr 3080 ft. D. S. Hoad et al's J. J. Baker 1, B. Carson sur, elev 437 ft, sd 1550 ft. Worthington & Stedham's W. H. Dejernett 1, E. Chick sur, elev 492 ft, sd 1925 ft.

FRANKLIN COUNTY — Harper-Byers Oil Co.'s A. J. Laws 1, D. G. Rogers sur, re-bldg dk, 2855 ft. L. B. Pruitt & Geo. L. Pace's C. E. Cowan 1, Lipscomb sur, lcn.

FRESSTONE COUNTY — Hicks et al's C. Lampier 1, D. Avant sur, lcn. E. L. Smith Oil Co.'s E. Jackson 1, Wiley Carter sur, dr 1015 ft.

HENDERSON COUNTY—Arcadia Ref. Co. & Shell Pet. Corp.'s Dean 1, Simon Boon sur, sp and sd. Westhyde Inv. Co.'s Thornhill 1, Jas. Spivey sur, lcn.

LAMAR COUNTY—K. O. Bundy et al's G. S. Legate 1, J. V. Cheney sur, rig. Everett & Allen's J. A. Guest 1, Luke Roberts sur, elev 525 ft, top Pecan chalk 2072 ft, fsh 2615 ft. Lamar County Dev. Co.'s T. W. Watson 1, I. L. Aud sur, dk. Puritan Oil Co.'s Geo. Parr 1, R. Russell sur, dk.

LEON COUNTY—Sun Oil Co.'s Ella Grayson 1, Marquette Blk., top Austin chalk 3462 ft, dr hard chalk 3740 ft.

MORRIS COUNTY — Verne Dumas Pet. Co.'s Thos. Ball 1, A. S. Young sur, rig. Holmes-Nelson & Flynn's O'Conner 1, J. B. Cherry sur, elev 379 ft, Pecan chalk 2618-3151 ft, top Austin chalk 3660 ft, dr 3750 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd — shut down; sdtr — sidetracking; sp — spudding; sr — straight reaming; std — standardizing; sw—salt water; td—total depth; ur—underreaming; wo — workover; wosr — waiting on standard rig.

NAVARRO COUNTY—Young et al's Farmer 1, Finlye sur, sd 1100 ft.

RAINS COUNTY—Berry-Hale et al's Owenby 1, J. Alexander sur, rig. Rains County Oil Corp. (R. A. Westbrook's) Wm. Cates 1, Calvin Gage sur, top Pecan chalk 2232 ft, trace oil and gas 3540-52 ft, dr 4020 ft.

RED RIVER COUNTY — Droppleman & Bundy's J. W. Cunningham 1, S. S. V. Chi sur, sd 2755 ft. C. M. Joiner-M. Harris-Echols & Peters' E. Howison 1, W. Humphries sur, elev 540 ft, sd 1455 ft. Everett & Allen's W. F. Bryan 1, P. Vaughn sur, dk. Pierson et al's J. R. Dellahunty 1, Moore sur, sd 330 ft. Johnson Pet. Co.'s S. C. Style 1, E. M. Dean sur, sd 2410 ft.

RUSK COUNTY—Dan S. Brooks-Root Ref. Co.'s Alford 1, abn in Georgetown lime 3520-3815 ft. R. W. Giles-Frank Melat et al's Newt Orr 1, Wm. Tippett sur, sd 2000 ft. F. Griffith et al's F. J. Lowe 1, Wm. Williams sur, elev 366 ft, top Pecan chalk 2790 or 2820 to 3140 ft, dr shale 3445 ft. J. S. Kimbrough et al's Weatherly 1, Robt. Martin sur, Pecan chalk 2784-3040 ft, dr shale 3465 ft. Rusk County Oil Co.'s Robertson 1-A, top Pecan chalk 2593 ft, sd 2750 ft. Nat Sadler et al's Ed. Sparks 1, Abner Nail sur, re-set 8-in cas 1257 ft.

SMITH COUNTY — Big Indian Oil Co.'s Mills-Wolford 1, Jas. Jordan sur, elev 420 ft, rig; Holland 1, Thos. Allen sur, top Pecan chalk 2775 ft, dr chalk 3785 ft. E. L. Chapman et al's Alexander 1, Pecan chalk 2700-30 ft, dr 2960 ft. Cotton Belt Oil Co.'s Moore-Jackson 1, H. Muckleroy sur, dk. East Texas Ref. Co.'s Tyiska 1, R. Wilson sur, Pecan chalk 2820-3240 ft, Austin chalk 3677-3756 ft, coring shale 3840 ft. Dumas Pet. Co.'s Cook 1, rig. Bailey Gaunce et al's Cook 1, rig. W. B. Hamilton et al's Gambrell 1, R. McAnulty sur, rig. Imperator Oil Corp.'s I. M. Green 1, T. Hogan sur, sp and sd. C. M. Joiner et al's W. M. Wright 1, E. Van Sickle sur, top Pecan chalk 2360 ft, dr 3480 ft. Magnolia Pet. Co.'s J. R. Wright 1, J. Vargus sur, dr 175 ft; Roy Loosier 1, J. Vargus sur, dk. C. R. Morrison et al's Roy 1, H. C. Cook sur, dr chalk 2700 ft. Owen-Sloan Oil Co.'s Starnes 1, dk. M. M. Rowan et al's Gibbons 1, J. Margarcia sur, sp. Sinclair O&G Co.'s Jarvis 1-B, dr 305 ft; Mayfield 2, Pecan chalk 2875-3208 ft, top Austin chalk 3701 ft, top cap rock 3842 ft, cored oil sand 3843-45 ft, sd to set cas; Petterson 1, rig; R. G. Wright 1, lcn. T. B. Slick & J. G. Kugle's Freeman 1, A. J. Lagrone sur, elev 498 ft, Pecan chalk 3080-3275 ft, fsh 3623 ft. Sun Oil Co.'s J. J. Denton 1, J. Vargus sur, rig; O. W. Knight 1, David Collins sur, lcn; A. V. Ritch 1, Sam Dexter sur, rig. The Texas Co.'s M. Blackwell 1, Jas. Jordan sur, Pecan chalk 2710-3090 ft, Austin chalk 3540-3624 ft, cem cas on oil sand 3698-3703 ft. Valentine & Smith's Wm. Stone 1, M. D. Shaw sur, rig. Witherspoon Oil Co.'s Wright 1, J. Vargus sur, Pecan chalk 2690 or 2714 to 3060 ft, Austin chalk 3544-3595 ft, cem cas on oil sand 3666-72 ft.

UPSHUR COUNTY—Arcadia Ref. Co. et al's P. S. Johnson 1, J. H. Mallory sur, dk. Beeler et al's R. H. McClelland 1, M. P. Torres sur, dk. Bremen & Woods' Robertson 1, J. Stephenson sur, elev 390 ft, Pecan chalk 2640-3003 ft, top Austin chalk 3599 ft, sd 3600 ft. Joe Burnham et al's Lena Beck 1, H. W. Augustine sur, rig. J. W. Green et al's Wooden 1, Isham Williams sur, dk. Fleetborn Oil Corp. (was Steinberger & Schwab's) J. T. Edwards 1, D. Ferguson sur, rig. McPhail-Smith & E. B. Perkins' Kay 1, T. G. Elliott sur, sp and sd. A. C. Trammell et al's M. A. Victory 1, E. A. J. Evans sur, lcn.

VAN ZANDT COUNTY—C. M. Joiner et al's W. B. Meeks-Randall 1, A. Dutcher sur, rig. Texas Chief Oil & Roy. Corp.'s Foster 1-A, F. Montgomery sur, dr 1805 ft.

VAN FIELD—Humble O&R Co.'s R. S. Blake 12, sp. Pure Oil Co.'s W. H. Cook 3, coring 3031 ft; A. G. Maxfield 4, top Austin chalk 2745 ft, dry and abn 2993 ft; R. C. Crim (37-ac) 3, top Austin chalk 2515 ft, testing 2941 ft; A. D. Clark (3-ac) 2, dk; W. T. Jarman 8, dk; B. W. Russell 1, cem cas 318 ft; F. B. Smith 6, cem cas 2826 ft; J. T. Thompson 11, top Austin chalk 2300 ft, cem cas 2474 ft; R. L. Wells 5, rig.

WOOD COUNTY — Deep Rock Oil Co.'s M. Smith 1, sp and sd. Paul Vitek & Penn's Rosa Vogel 1, Sarah English sur, rig. Wood County Dev. Co.'s M. M. Rick 1, Daniel Fuller sur, sd 1500 ft.

WEST TEXAS

Completions

Company, Well and Location		Initial Production Bbls.	Depth
CULBERSON COUNTY—			
Cranfill Bros. Oil Co., Seay 1	*		2430
PECOS COUNTY—			
Cosby Prod. & Royalty Co., W. D. Riser 1	*		1675

BORDEN COUNTY—Geo. Goodrum et al's Conrad 2, sd 780 ft.

BREWSTER COUNTY—Trans-Pecos O&G Co.'s Jones 1, elev 3073 ft, sd 2900 ft.

COKE COUNTY—Reid-Hitchens & Stanolind O&G Co.'s Duncan 1, elev 2151 ft, sp and sd.

CONCHO COUNTY—W. I. Betts & Daniels' Wood-Hendrick 1, sp and sd. A. W. Turner-Cromwell & Wesner's Brosig 1, elev 1699 ft, sd 1885 ft.

CRANE COUNTY—Cranfill-Gulf Prod. Co.'s J. B. Tubb 1, elev 2526 ft, salt 505-1400 ft, top brown lime 1410 ft, top white lime 2455 ft, pb from 5336 to 4503 ft, for shot, fsh liner and flowing 45 bbls oil daily. H. H. Sides et al's B. P. Nolen 1, elev 2355 ft, sd 175 ft.

CULBERSON COUNTY—Cranfill Bros. Oil Co.'s Seay 1, abn 2430 ft. W. L. Kornrumpf et al's W. D. Garren 1, sd 1280 ft.

DAWSON COUNTY—R. A. Albaugh et al's Robinson 1, sp and sd.

ECTOR COUNTY—Galt-Brown Co. & Penn Oil Co.'s Cowden 1, elev 3047 ft, top anhydrite 1525 ft, salt 1535-2600 ft, top brown lime 3852 ft, sd 3860 ft.

EL PASO COUNTY—Tri-State Oil Co.'s Bobadella 1, fsh 615 ft.

FISHER COUNTY—Cranfill-Reynolds Co.'s Flanigan 2, elev 1810 ft, testing new prod horizon 3800 ft. Stanolind O&G Co.'s Steele 2, elev 1873 ft, dr 2300 ft. The Texas Co.'s J. A. Jean 1, dr 700 ft. Texas Unity Oil Co.'s First Nat'l Bank 1, elev 1848 ft, co 2700 ft.

GAINES COUNTY—Landreth Prod. Corp.'s Nick Alleu 1, dr 135 ft. Texas Consolidated Oil Co. & T. P. Coal & Oil Co.'s E. H. Jones 1, elev 3636 ft, top anhydrite 2120 ft, top salt 2225 ft, sd 3435 ft.

GARZA COUNTY—Garza County Dev. Co. (Penny & Porsey's) Justice 1, elev 2266 ft, top salt 550 ft, top lime 1825 ft, sd 2625 ft.

HOWARD COUNTY—Continental Oil Co. & Group One Oil Corp.'s E. E. Brindley 1, elev 2530 ft, top salt 1170 ft, salt water 2937-70 ft, dr 2975 ft.

HUDSPETH COUNTY—R. G. Patillo & Ed. Welch's K. S. Briggs 1, elev 4017 ft, dr 515 ft.

IRION COUNTY—Benedum-Trees & M. E. Davis' Sugg 1, rig. Perry Fox et al's H. Horney 1, dr 300 ft. Stanolind O&G Co.'s W. H. Williams 1, elev 2544 ft, dr 5320 ft. W. E. Newton et al's Horney 1, dr 1480 ft. Straughn et al's Tankersley 1, elev 2306 ft, sd 1560 ft.

JONES COUNTY—J. C. Albers & L. D. Pruitt's L. L. Burton 1, sp. Bonds-Trout et al's Williams 1, sd 2581 ft. Jake Croft & Conner et al's W. D. Swann 1, co 900 ft. Hardly Able Oil Co.'s Butler 1, top lime 2484 ft, sd 2605 ft. C. C. Julian Oil & Roy. Co.'s Sears 1, lcn. Shaheen et al's Chittum 1, abn 2110 ft. Tex-Mex Oil Co. & Eastland Oil Co.'s Brewer 1, dr 865 ft. Andy Urban et al's Ed. Quinn 1, rig. Sam C. Yingling et al's Coates 1, fsh 2205 ft. Young & McNeil's L. R. Cade 1, dr 1690 ft.

LOVING COUNTY—The California Co.'s J. G. Allen 3, elev 2741 ft, top salt 815 ft, dr by tools 2858 ft; Allen 4, dr 1685 ft. Carl Cromwell & Atlantic Oil Prod. Co.'s Russell 2, rig. Erwin & Mohres Dev. Co.'s Lillie Thorpe 1, sd 810 ft. Folbre & Evans' D. P. Dean 1, fsh 1385 ft. Grisham-Hunter Corp.'s Dean 1, elev 2655 ft, sd 1940 ft. Henshaw et al's Reagan 2, rig. Pete Hoffman et al's Ramsey 1, elev 2685 ft, top salt 760 ft, co 4060 ft; Ramsey 2, elev 2678 ft, top salt 775 ft, dr 1710 ft. Lewis & Slagel Drl. Co.'s Cartwright-Henderson 1, elev 2901 ft, salt 585-2907 ft, top Delaware lime 3086 ft, top sand 3127 ft, pb from 3182 ft to 3178 ft and bailing oil before shot. Lockhart & Co.'s I. J. Bell, elev 2705 ft, top salt 770 ft, dr 2900 ft. H. W. Martin et al's Wheat-Ramsey 2, dk. Fred H. Meyer et al (was Mohres et al's) W. R. Lind 1, rig. Richmond Drl. Co.'s Wheat-Ramsey 1, elev 2678 ft, top salt 765 ft, dr 2925 ft. W. A. Sudderth & James Capitola Pool 1, dr 730 ft. F. S. Tennant et al's Roy Martin 1, sd 255 ft. West Texas Pet. Co.'s Allen 2, top salt 810 ft, sd 4110 ft.

MENARD COUNTY—C. O. Moore Oil Co.'s Callan 1-A, elev 2079 ft, sd 1085 ft. L. G. Priest et al's Sorrells 1, elev 2279 ft, ur 2855 ft. Voss & Bryan's Brandenberger 1, elev 1921 ft, fsh 805 ft.

PECOS COUNTY — W. B. Hagan et al's Shearer 1, dr 1175 ft. J. R. Miller et al's Bennett 1, sd 2285 ft. Penn Oil Co. et al's J. B. Alvis 1, elev 3493 ft, dr 3450 ft. Lockhart & Honolulu Oil Co.'s R. D. Webb 1, machine. W. F. Whittaker & Calloway's Devlin 1, elev 2706 ft, dr 460 ft.

REEVES COUNTY—The California Co.'s Kloh 2, trace oil 2568-75 ft, dr gray lime 3720 ft. Humble O&R Co.'s Balmorlea 1, dr 430 ft. Lee O. White et al's Hersheusen 1, co 4415 ft.

RUNNELS COUNTY—Chas. Dutton et al's Dean 1, co 2335 ft.

SCHLEICHER COUNTY—Eastland Oil Co. Unit Plan's Tisdale 1, elev 2295 ft, dr 2355 ft. Teas & Walter Gant's Allison 1, elev 2311 ft, (dd), dr 5085 ft. J. D. Wesner et al's Ratcliff 1, elev 2408 ft, fsh tools 3705 ft.

SCURRY COUNTY — R. B. Pender O&G Co.'s Davis 1, elev 2208 ft, top salt 445 ft, dr 5115 ft. Seifert & Dibble's Blackman 1, top salt 720 ft, dr 3305 ft. Simons & Brock's F. Kruse 1, lcn.

STERLING COUNTY—W. C. Beasley et al's Foster 1-A, elev 2518 ft, top salt 1410 ft, dr 1675 ft.

TAYLOR COUNTY — Adams-Ferguson & Hobbs' Lowe 3-A, ur 1700 ft. J. B. Jameson et al's Webb 1, elev 1950 ft, dr 6382 ft. Sanger et al's Abilene Water Works 1, elev 1759 ft, sd 2785 ft.

TERRELL COUNTY — Mid-Kansas O&G Co.'s Goode 1, sd as gasser, td 6120 ft. Leonard Jones et al's Peckenham 1, elev 2607 ft, sd 1245 ft.

UPTON COUNTY—Bennett Oil Co. & P. H. Williams' Shirk 1-A, sd 2727 ft. Duffey et al's McClintic 5, rig. Gulf Prod. Co.'s McElroy 93, elev 2688 ft, top salt 1100 ft, dr 2985 ft; McElroy 94, dr 2170 ft. Mintex Oil Co. & Harry Baldwin's Lane 1, elev 2743 ft, top salt 738 ft, dr 1880 ft.

WARD COUNTY—Alpine Oil & Dev. Co.'s Boogher 3, elev 2741 ft, top salt 810 ft, sd showing oil and gas 2159 ft. Beckley et al's Johnson 1, dr 945 ft. Bell & Wier's Boogher 1, top salt 800 ft, set cas 2120 ft; Boogher-Cummings 1, top salt 785 ft, dr by junk 1910 ft. Buster Black et al's Hall-Roberts 1, dr 700 ft. Alex Bradford et al's B. Carson 1, elev 2457 ft, top salt 820 ft, dr 1610 ft. Clyde Bradford et al's Hordage-Wilson 1, elev 2544 ft, top anhydrite 775 ft, top salt 1027 ft, testing with 1300 ft oil in hole 2317-2437 ft. Bradford & Abell's E. R. Allen 1, machine. The California Co. & Atlantic Oil Prod. Co.'s A. B. Gordon 1, elev 2523 ft, top salt 1000 ft, co with 2400 ft fluid in hole 2352-2599 ft. Central Gas & Oil Co.'s Lee Monroe 1, dr 135 ft. Gibson Bros. et al's Johnson 1, elev 2432 ft, top salt 720 ft, dr 980 ft. Gulf Prod. Co.'s Hutchings 7, elev 2648 ft, top anhydrite 910 ft, top salt 1162 ft, flowing 65 bbls oil daily 2490-2556 ft; O'Brien 17, top salt 1085 ft, top lime 2323 ft, dr 2450 ft. Harkinson et al's A. Emory 1, set cas 835 ft. Magnolia Pet. Co.'s Sealy-Atlantic 1, elev 2686 ft, top anhydrite 1505 ft, show black oil 2805-15, ft, set cas in lime 2933 ft, dr 2995 ft. R. F. Owen et al's Johnson 1, elev 2499 ft, top salt 1600 ft, dr 4360 ft. Peck et al's Geo. Merritt 1, dr 1540 ft. Rector Oil Co. et al's J. S. Smith 1, machine. Shipley Oil Corp.'s Monroe 1-A, elev 2655 ft, top salt 2485 ft, cemt cas 3800 ft, sd 3825 ft; Hayzlett 5, sd 2507 ft. Simms Oil Co.'s M. Himmel 1, top salt 965 ft, dr 1085 ft. E. E. "Buck" Sturm et al's R. H. Hill-Jones 1, dr 740 ft. White et al's L. H. Owenby 1, top salt 795 ft, dr 1135 ft.

SOUTH TEXAS

BASTROP COUNTY — Smith and Burns' Marburger, King and Millett sur, mov on. Schimmel & Batts' Williams 1, 2½ mi sw Yoast field, 6 mi n Lytton Springs, show oil in serpentine, setting csg for test.

BEE COUNTY—Grebin & Woods' Riggs 1, James Nowland sur, 6½ miles w Skidmore, 2 miles from Live Oak line, prep to spud. Alexander et al's McFall 1, 3 mi s Skidmore, dr 1200 ft. Catlett & O'Neill's Miller 1, Ronald Hoskiss sur, 8 mi w Beeville, abn 4516 ft. Gulf Coast Oil Co. (Moody-Seagraves) McKinney 2, Geo. Habbermacher sur, 3 mi n Pettus pool, near No. 1 gasser, dr 2865 ft. Davis et al's George Ray 1, just n Morgan's Ray 1, 1 mi sw Pettus, rigged up to spud. J. S. Mauldin's Mauldin 1, G. A. Kerr sur, just sw Pettus townsite, waiting on csg, td 3862 ft, sand 3847-54 ft, showed some oil. United Prod. Co.'s Ray 38, 900 ft east prod, T. Hanson sur, Ray-McKinney pool, topped sand 3974 ft, set casing wait on cement; Ray 37, Willis A. Moore sur, about 1 mile e slightly s Ray-McKinney production, set 420 ft surface csg.

BEXAR COUNTY—Camp et al's Chavez 1, abt 10 miles east and south of San Antonio on 7500-acre block owned jointly by Humble, near Elmendorf, spudded. Russell & Moore's A. O. Mills 1, Navarro sur, 10 miles s San Antonio near Somerset road, sd 938 ft. J. Morgan Russell's Price-Story 1, A. Navarro sur, 10 miles s San Antonio, near Somerset road, sd for repairs 1175 ft. Uechert et al's Palfrey 1, se San Antonio, near Brooks field, sd below 1803 ft. Weilbacher and Brock et al's Ernest 1, J. Christopher sur, 2 miles n Somerset, sd 925 ft.

BLANCO COUNTY—Meeks et al's Walker 1, ne cor Noel Nixon sur No. 23, 4 miles n Blanco City, dr 1050 ft in Pennsylvanian, completed 4 month's fsh job.

BROOKS COUNTY—The Texas Co.'s Allen Land and Cattle Co. 1, 7110-acre San Antonio Grant, dr 850 ft, sand 800 ft, showed sw. Howeth et al's Singers 1, 400 ft e Humble Singer 1, sur 436, rigged up.

CALDWELL COUNTY — J. E. Mills & Chapman's McMahon 1, Pinchback sur, 6 mi se Lockhart, fsh 2337 ft. Rayor's Dunlop 1, near Luling, td abt 2400 ft, fsh for tools abt 2200 ft, lost hole, abn; Dunlop 2, skidding dk for replacement hole. Ralph Ogden et al's O. S. Alexander 1, 450 ft n of Foster Reiter's Alexander 1, 10 miles se Lockhart, dr 1015 ft.

DUVAL COUNTY — Humble O&R Co.'s Kohler 50, Kohler pool, sur 164, set 9⅝-inch csg 6009 ft, td 6084 ft, wait on cement. O'Byrne et al's Weil Bros. 1, BS&F sur No. 568, 7 mi sw S&O pool, rep boiler 1720 ft. Southern Oil Co.'s King Harper 2, sur 323, Cole district, lcn abn. S. J. Carpenter's (Gus Pape) Juan Benavides 1, blk 38, sun of No. 1 Carpenter sub, Mesquite Grant, sand 1665-69 ft, showing oil, prep to set casing. Magnolia Pet. Co.'s Wilson 3, sur 134, S&O pool, dr out plugs, set 6⅝-inch csg on top of sand 2349 ft, showed oil. The Texas Co.'s Bishop Duval Land Co. 1, sur 135, S&O pool, dr out plugs, 6⅝-inch csg set 2349 ft on top sand showing oil. Magnolia Pet. Co.'s W. Benavides 1, Cole district, sur 172, dr 150 ft, 12½-inch csg set 20 ft. Coffee et al's Jose Garza, center sur 49, Garza Irrigation Company, dr 825 ft, no further report.

FRIO COUNTY—Wray and Dunbar's Barnes 1, sec 123, one mile from Big Foot, set wool plug in bottom of hole, 3708 ft, casing set 3662 ft.

GUADALUPE COUNTY — Harry Bruner's Jim Sherrill, George Allen League, northern part of county, near Staples, spud in. C. McGarity et al's August Wesch 1, H. M. Thompson sur, 89, nw part of county, 2 miles n Marion, no report. J. E. Linne 1, 8 mi sw Seguin, 5 mi s Marion, V. Cortario sur, lcn.

HIDALGO COUNTY—Dayle L. Smith Oil Co.'s W. Fernadez 5, 21 miles w McAllen, 3 miles n Sam Fordyce, making test, casing set 3968 ft, td 4026 ft, showed for large gasser.

JIM HOGG COUNTY—DeWitt-C. DeWitt's Terfilo-Gomez 1, sur 12, dr 200 ft. Magnolia Pet. Co.'s Y. V. Cuellar 1, blk 92, W. A. Dannelly sub, sur 575, Share 2, El Peyote Grant, dr 3832 ft. P. & M. Oil Co.'s (Peterman and Minahan) Palacios 1, 3 miles s 10 degrees e Randado field, sur 231, blk 14, sd 1360 ft.

JIM WELLS COUNTY—Carsil O&G Co.'s McGill 1, 900 ft due n of No. 1, William D. Baldwin sur, 3 miles n Armagosa, 12 miles sw Larcro field, coring 2715 ft. Gulf Production Co.'s Sheaffer 3, J. Pointevent sur, 7 miles n Carsil well, dr around 2100 ft at last report.

KERR COUNTY—Herbert Oil Co.'s Witt 1, W. H. Hamilton sur, lcn. Col. B. M. Hatridge (Neely & Halbert) W. R. Rischworth 1, sec 1459, 2 miles se center point, td 117 ft, new operator to drill well. Col . B. M. Hartidge et al's Westland 1, blk 23, Westland Addition, Kerrville townsite, td 460 ft, to set csg at 40 ft. Evans and Sprinkle's Jeff Love 2, sw corner sec 1593, one-half mile se discovery well, prep to ru. Evans and Gant's Seiker and Mears 1, sw corner sec 1605, CCSD&RGNR Ry sur, 2 miles ne Love well, run 8-inch csg to 1650 ft. Chester A. Martin's (Mims et al—formerly Evans and Gant's) J. E. Young 1, nw cor sec 28, n and slightly east Love well, to spud shortly.

KLEBERG COUNTY—Barbee & Hunter's Finnegan 1, nw corner John D. Finnegan tract, 7 miles s Kingsville, dk.

LA SALLE COUNTY — Fred W. Volz's Coleman 1, blk 15, sur 514, sd 40 ft.

LIVE OAK COUNTY — Burke Greis Oil Co.'s George West 1, 10 miles w George West Townsite, abt center James Vaughan sur, set 450 ft surface csg. Houston Oil Co.'s Cartwright 23, Sandman sur, Mt. Lucas district, spudded. Brown Land and Cattle Co. 4, sw corner M. B. Kivlin sur, Mt. Lucas district, fsh 5724 ft.

McMULLEN COUNTY—Camp and Stanolind Oil Co.'s Murphy 1, 1½ miles ne Massey 1, spudded.

NUECES COUNTY—Gulf Coast Oil Co.'s Maggie Harrell 1, ¾ mile n field, sec 311, blk 32,dr 2800 ft. L. L. Smith, Inc.'s Hunter 1, e of field, Rincon del Osa grant, sd 1700 ft for repairs to machinery. Saxet Oil Co.'s Dunn 8, ne of No. 7, cored shale at 4020 ft.

REAL COUNTY — Gant and Kilgore and Eastland Oil Co.'s Dan Auld 1, sec 23, CCSD &RGNR Ry. sur, 3 miles sw Love well, show little oil in black shale at 3285 ft, to run 6⅝ inch csg. Evans and Sprinkle's Haby 1, dr 1590 ft.

REFUGIO COUNTY—Humble O&R Co.'s D. M. O'Conner 1, near Victoria line overlooking San Antonio river, lcn. Houston Oil Co.'s Rooke 14, 3 miles w of field in old gas area, abn dry 6124 ft.

SAN PATRICIO COUNTY—Saxet Oil Co.'s White Point Development Co. 4, White Point field, set casing 4905 ft, sand and shale showing oil 4910-53 ft, waiting on cement.

STARR COUNTY — B. B. Tips' Frank Doyono, lower tract No. 4, Porcion 81, sd 332 ft. Sacramento Oil Co.'s Seabury et al 1, Porcion 75, sd 411 ft. Los Olmos Oil Co.'s Kelsey Bass 4, blk 7, sub of Porcion 75-76-77, Jurisdiction of Camargo, dr 165 ft.

VICTORIA COUNTY—Houston Oil Co.'s Beck 1, Beck Salt Dome district, n Victoria, lcn. Simpson-Fell Oil Co. & Westheimer et al's Levi 1, 10 miles s Victoria, 15 miles ne McFadden field, dr 3610 ft. T. B. Slick Estate's McFadden 1, ne Lion Oil Refining gas

production, dr 2412 ft. The Texas Company's McFadden 3, w of No. 2 gasser, to move on. United Production Co.'s McFadden 4-A, s part of county on Lion's block, dk.

WEBB COUNTY—Cole Pet. Co. (Carson) Benavides 2 (4) sur 1601, fsh for drill collar and bit at 1710 ft. Carolina-Texas O&G Co.'s Barnsley 9, blk 13, sur 268, completed 15,000,000 cubic ft gas, 450 pounds, sand 2567-75 ft, csg set 2567 ft.

ZAVALLA COUNTY—Texas Gas Utilities Co.'s I. Pryor 4, 1080 ft nw No. 3 gasser in Pryor field, abn abt 725 ft; Pryor 5, 540 ft w of No. 3, completed as 7,000,000 cubic foot gasser, 674-76 ft.

ZAPATA COUNTY — Benson Oil Co.'s S. Vela 1, blk 12, sur 259, dr 1675 ft. E. C. Brogan's Montemayor 1, blk 11, sur 64, showed sw 1492-1500 ft, may plug back, casing set 1491 ft. Bill Henry's Gopher Trust Estate 1, blk 10, sur 4, Fullerton sub of Share 8, Borrego Grant, sd 1400 ft to lay new water line. O. W. Killam's A. Bustamante 7, blk 7, share 5, Fansler Partition, Comitas Grant, dr 1200 ft; Cuellar 40-C, sur 278, dk. National Oil Co. of Texas' Luther et al 1, blk 97, Da Pron sub, Porcion 6, sd 590 ft. Neilson and Coursey's Luther et al 1, blk 11, sec 5, Fullerton sub, Share 8, Borrego Grant, dr 1262 ft. J. I. Newton's I. G. Trevino 3, blk 7, sur 66, lcn abn. Penny Prod. Co.'s Cuellar et al 1, blk 1, sur, 2, Pappas sub, Porcion 33 and 34, reaming 2035 ft. Talmadge and Mackenzie's Trevino 1, blk 6, sur 4, Marts and Beavens sub, Porcion 2 and 3, sd 519 ft. T. H. Ward's Uribe 1, blk 8, sub of share 7, Partition 6, Trinidad Uribe Partition of Borrego grant, prep to start dr.

TEXAS GULF COAST

ANGELINA COUNTY—R. D. Moore's Abney Estate 1, sd 1350 ft. Pollock Oil Co.'s Sessions 1, Garza Sur., sd 3050 ft.

AUSTIN COUNTY—O'Hara et al's Schrader 1, Hacienda Sur., dr 3750 ft. shale. Empire's Kunze 1, San Felipe, dr 6920 ft. shale. Parmeson & Cafferkey's Scholeckte 1, Fitzgibbons Sur., dr 940 ft. clay. Humble's Remmert 1, Raccoon Bend, lcn.

BRAZORIA COUNTY—Thos. Faust et al's Fee 6, 2 mi s Nash dome, abn 6515 ft. United Oil Synd.'s Speer 1, 3 mi n Danbury, set 4½-in scr 1865 ft. Freeport Sulphur Co.'s Fee 2001, Bryan Mound, abn 5260 ft. D. C. Wellock's Hammon 1, Damon Mound, sd 200 ft. The Texas Co.'s Belcher 1, se Manvel, lcn. Rycade & Amerada's Seaburn 1, Stratton Ridge, washing 7020 ft.

BURLESON COUNTY — Doran et al's Sparks 1, ne cor of county, fsh 1300 ft. Mid-South Oil Co.'s Duckworth 1, 2 mi e Clay Station, sd 2640 ft. Reynolds Oil Co.'s Harris 1, sd 400 ft.

CALHOUN COUNTY—The Texas Co.'s Smith 1, Chocolate Creek, dr 4900 ft. shale.

CHAMBERS COUNTY—Pure's Mayes 13, Lost Lake, dr 3650 ft. gumbo.

COLORADO COUNTY — United N. & S. Dev. Co.'s Lockwood 1, ru.

FAYETTE COUNTY — Elam & Reynold's Florence 1, sd 1320 ft. shale.

FORT BEND COUNTY—Cullen & West's Lockwood 1, 3 mi s Thompson, dr 2340 ft. gumbo. Telschow, Cady et al's Blakely 1, Blue Ridge, dr 2320 ft. gumbo. Gulf's Moore 29, Moores Field, dr 2620 ft. shale and lime.

GALVESTON COUNTY—Yount-Lee's Cade 20, High Island, ru; Cade 21, dr 2600 ft, shale and lime.

HARDIN COUNTY—Pearce & Proctor's Russell 40, lcn. The Texas Co.'s Fee 307, Sour Lake, stdg 3000 ft.

HARRIS COUNTY—Baldwin et al's Fritz 1, 3 mi n Cyprus, lcn 2640 ft ewl and 400 ft snl of Fritz 100-acre tract in F. Zander Sur. Humble's Minnetex 5, ru; Minnetex 6, dr 3580 ft. shale. Kepley Oil Co.'s Prud. Inv. Co. 2, Pierde Junction, lcn. Rio Bravo's Settegast 21-A, ru; Westheimer 1, lcn. Smith & Hamill Dr. Co.'s Parsons 1, lcn.

HOUSTON COUNTY — A. E. Winfree's Hodges 1, 1500 ft from w and 185 ft from nl of 50-acre tract of R. R. Russell Sur.

JEFFERSON COUNTY—Humble's McFadden 1, 8 mi e Big Hill, rm 7460 ft. The Texas Co.'s Pipkin 4, dr 5900 ft. shale.

LAVACA COUNTY—F. P. Zoch's DeBard 1, lcn.

LEE COUNTY—Burt et al's Sanders 1, sd 3120 ft. A. H. Wheeler's Wheeler 1, 6 mi sw Lexington, o.s. 3200 ft. Prep to set cas.

LIBERTY COUNTY — Cranfill-Reynold's Davis 7, dr 4460 ft. shale and lime; Gulf's Boyt 13, set 9⅝-in cas 3810 ft. M. L. Gray's Schindler 1, dr 1120 ft. rock. Harrison Oil Co.'s Jones 2, North Dayton, ru.

MATAGORDA COUNTY—Cockburn et al's Hawkins 3, Shepherds Mott, ru. Empire's Boker 1, Citrus Grove, dr 6050 ft, sand and shale.

MILAM COUNTY — Dil-Tex. Oil Corp.'s Dulbeck 1, lcn. W. H. Elliott's Davis 1, sd 2150 ft. lime. Kisker et al's Ward 2, sd 3080 ft. J. E. McKee's Littleton 1, sd 650 ft. Peggi Bros' Reed 1, sd 2180 ft. Red Bank Oil Co.'s Foster 1, 12 mi e Cameron, dk. Rhoenbotham et al's Johnson 1, fsh 2100 ft.

MONTGOMERY COUNTY—Wilhite & Hornbeck's Lieberman 1, 2½ mi w Conroe, coring 3900 ft.

ORANGE COUNTY—Crews Oil Co.'s Mansfield 1, sd 1412 ft.

POLK COUNTY—Freeman et al's Freeman 2, 4 mi se Leggett, dr 2970 ft. rock.

SAN AUGUSTINE COUNTY — Lambeau Thompson Dr. Co.'s Whitton 1, sd 2900 ft. Henry Maulding's Frost Lbr. Co. 1, dr 1180 ft, rock. H. H. Gracy's Morrison 1, ru. Chapparel Oil Co.'s Holt 2, sd 3100 ft. E. L. Chapman's Pickering Lbr. Co. 1, sd 2700 dr 2700 ft. J. M. Bradley's Ashberry 1, dr 475 ft.

TYLER COUNTY—King Oil Co.'s Caswell 1, sd 1250 ft. Texas Sun Co.'s Wilson 3, sd 4870 ft. L. H. Wentz's Long Bell Lbr. Co. 1, dr 4030 ft. shale.

WASHINGTON COUNTY—Cord Oil Co.'s Hahn 1, abn 1885 ft. Penn Tex Oil Co.'s Kamas 2, sd 2800 ft. Sun's Marcus 3, lcn; Schlottman 3, abn 1809 ft. Yegua Oil Co.'s Graves 1, sd.

WHARTON COUNTY—H. H. Givan's Hudgins 3, fsh 1470 ft. Poole & Chappel's Lee 1, lcn; Poole 1, abn 550 ft.

LOUISIANA GULF COAST

ASCENSION PARISH—Triumph Oil Co.'s Lacey 2, stdg 4225 ft.

AVOYELLES PARISH — M. L. Vincent's Morrow 1, sd 4220 ft.

BEAUREGARD PARISH—Beauregard G&O Co.'s Cochran 1, Merryville, dr 1550 ft gumbo.

CALCASIEU PARISH — Wilfred Lahay's Jardell 1, 2 mi e Vinton, sd 3250 ft. Dr. Thomas et al's Hewitt 1, 2 mi e Edgerly, lcn. Vacuum's State 7, dr 6567 ft, o.s. top 6558 ft; Miller 12, dr 4630 ft shale. Yount-Lee's Miller 2, lcn. J. O. Davis' Ind. Lbr. Co. 1, 8 mi e Starks, coring o.s. 1102 ft, top o.s. 1095 ft. Union Sulphur Co.'s Fee 765, Sulphur, dr 4345 ft sand; Fee 766, comp for 1500 bbls 4967 ft; Fee 767, lcn.

CAMERON PARISH — Freeport Sulphur Co.'s Gulf Land Co. 7, Black Bayou, lcn. Vacuum's Cameron Meadows 2, dr 3570 ft sand and shale. The Texas Co.'s State 8, dk. Federal Pet. Co.'s Herbert 2, dr 5550 ft shale. R. E. Seiss' Vincent 2, Hackberry, dr 2020 ft rock. Magnolia's Sweet Lake Land Co. 2, Sweet Lake, sd 4874 ft. Pure's Yount-Lee 10, woc 7385 ft.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 11, Jefferson Island, dr 860 ft lime.

IBERVILLE PARISH—Standard of La.'s Gay 1, Bayou Choctau, sdtr 4113 ft; Baist 1, Bayou Blue, os. 3785 ft; Schwing 3, sd 2990 ft; Wilbert 9, Bayou Des Glaise, dr 3330 ft sand.

JEFFERSON DAVIS PARISH—A. V. Peters' Smith 1, Welsh, prep to pump 1160 ft.

ST. MARTIN PARISH—Humble's State 4, Bayou Bouillon, dr 4720 ft sand and shale.

ST. TAMMANY PARISH—Washington and St. Tammany Drlg. Co.'s Coussack 2, ta. 2030 ft.

TANGIAPAHOE PARISH—Joan Dev. Co.'s Lake Superior Oil Co. 1, ta 3016 ft.

TERREBONNE PARISH—The Texas Co.'s Bay St. Elaine 1, stdg 4750 ft; Caillou Island 6, dr 4480 ft sand and shale; Dog Lake 4, dr 3360 ft sand; Four Isle 5, dr 600 ft lime; Lake Barre 6, dr 2970 ft shale; Lake Barre 13, set 12½ cas 4060 ft.

VERMILION PARISH — Pure's Alliance Trust Co. 1, Gueydan, dr 130 ft clay.

WEST FELICIAN PARISH — Putnam Synd.'s Como Plantation 2, dr 1490 ft gumbo.

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HARRISON COUNTY—		
W. G. Ray Drilling Co. et al, Hall 1, D. Davis sur.	*	3472
Sinclair O&G Co., Davenport 1, J. V. Morton sur.	*	3735
MARION COUNTY—		
Sinclair O&G Co., Wright-Braden 1, Jacob Grover sur.	*	3463
Sinclair O&G Co., D. R. Coulter 1, Wm. Russell sur.	*	3906
PANOLA COUNTY—		
Everett Prod. Co., McDaniel 1 (third hole), Alamson Barr sur.	*	410
SABINE COUNTY—		
Loring Oil Co., Nona Mills Lbr. Co. 1, Jas. Mason sur.	*	4803

HARRISON COUNTY — Hunter et al's Daugherty 2, W. B. Burris sur, 12½ cas 245 ft, ta in Georgetown 3563 ft. O. H. Parkening's T. J. Taylor 1, Walter H. Payne sur, dr 573 ft. T. J. Taylor 2, J. C. Hawley sur, dk. Rowan & Nichols' Bussey 1, E. A. Merchant sur, sp dr 100 ft. Crump & Hannagan's Dunn 1, Bettie Humphries sur, elev 330 ft, ta 4006 ft. W. G. Ray Drilling Co. et al's Hall 1, D. Davis sur, 10-inch 173 ft, top PG 2257 ft, base PG 2859 ft, top AC 3445 ft, base AC 3471 ft, top Georgetown 3472 ft, dry abn, td 3472 ft. Siegel Bros. et al's T. J. Taylor 1, F. O'Neal sur, lcn. Sinclair O&G Co.'s Davenport 1, J. V. Morton sur, elev 396 ft, top PG 2420 ft, base PG 2960 ft, five foot sand 3693-98 ft, dry abn in Georgetown, td 3735 ft. Geo. L. Pace's Barker 1, Victor Pedraso sur, elev 349 ft, top PG 2207 ft, dr white lime strks shale and chalk 3691 ft. Banner et al's Lowrey 1, W. O. Stanfield sur, top Nacatosh 1700 ft, top PG 2136 ft, cored sand showing oil 2797-2805 ft, cemtd 6-in cas 2797 ft, td 2805 ft. Ryan Cons. Pet. Corp.'s H. H. Key 1, E. Carroll sur, rig (Trinity test planned). Everts Drilling Co.'s Sypert 1, Richard Hooper sur, rig. J. M. Gholson's Bivins 1, T. K. Pearson sur, dk. Olford et al's Bolding 1, W. O. Stanfield sur, sp dr 100 ft. William Atkinson's Hays 1, J. C. Chappin sur, sp dr 50 ft. Thomas & Kinsey's J. R. Watson 1, Thomas Iden sur, dk.

MARION COUNTY—Trammell et al's Hus-

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sey 1, Chas. Lockhart sur, elev 282 ft, top chalk 1771 ft, 8¼ cas 1514 ft, ta junk in hole, td 1878 ft. Ronadeau & Hindman's McGaugherty 1, W. J. Wills sur, co to deepen, td 2450 ft. Hindman et al's Lindsay 1, Alex Albright sur, sd 400 ft. J. W. Hamilton's Wood 1, Alex Albright sur, sd 400 ft. Sinclair O&G Co.'s Wright-Braden 1, Jacob Grover sur, elev 336 ft. top Georgetown 3451 ft, dry abn, td 3463 ft. D. R. Coulter 1, Wm. Russell sur, elev 376 ft, dry abn in lime, td 3906 ft. Gist, Claunch et al's Laun 1, Henry Fugham sur, rig.

NACOGDOCHES COUNTY—Adams & Williams' Stephens 1, 15 mi nw Nacogdoches, dk. Big Indian Oil Co.'s Stewart 1, Black Jack community, lcn. Texokla Corp.'s Driver 1, Patricia de Torres Sur., dr 1260 ft, lime. Bendum Trees' Conkrite 1, 1 mi s Chireno, dr 3100 ft chalk. C. M. Bowie's Miller 1, Strode Sur., set 6-in cas 675 ft. Bunte, Martin & Scoggins' Boatman 1, Moore sur, gas pocket 480 ft. J. F. Burke et al's Pattison 1, sd 4270 ft. Fain & McGaha's Pirtle 1, 25 mi nw Nacogdoches, dk. Foreman & Weller's Stanley 1, 14 mi e Nacogdoches, ru. Matthew Foreman's Matteuer 1, Chireno sur, dk. Upland Oil Co.'s Cooper 1, Windsor sur, ru. Twin Counties Oil Co.-Joiner's Reeve 1, Lloyd sur, ru. Ramey-Stegall's Cates 1, Melrose, lcn. Sequoia Oil Co.'s Boyd Estate 1, 1½ mi s Cushing, ru. Starks et al's Langford 1, Cason sur, abn 3879 ft. West Texas Prod. Co.'s E. C. King 1, 3 mi w Garrison, ru. W. W. Wheeler's Parmley 1, 8 mi nw Nacogdoches, dr 3100 ft. lime. E. L. Chapman-Tilford's Hunt 1, 16 mi nw Nacogdoches, dr 3300 ft. chalk. Joiner-Henson's Andy Legg 1, 17 mi sw Nacogdoches, dr 400 ft. J. C. McNeill's Hayter 1, 7 mi w Nacogdoches, dr 1000 ft.

PANOLA COUNTY—Bell et al's Burnett Lbr. Co. 1, S. B. Hendrick sur, elev 186 ft, sd 3335 ft. Dillon &Bradham's Baldwin 1, Hampton West sur, 12½ cas 43 ft, claim top PG 1500 ft, sd 1555 ft. United Prod. Corp.'s Steele 17, B. C. Jordan sur, lcn (Trinity test). Werner 10, B. C. Jordan sur, dr 1485 ft (Trinity test). Daisy O&G Co.'s Rucks Hrs. 1, Jno. Palmer sur, 12½ cas 780 ft, top chalk 1352 ft, 8¼ cas 1900 ft, dr lime 2988 ft. Neff et al's Brumble 6, B. C. Jordan sur, dk (Trinity test). Texas Co.'s Brumble 12, Jno. Womack sur, 10-inch 1200 ft, cemtd 6⅝ cas 4450 ft. Everett Prod. Co.'s McDaniel 1, (third hole), Alamson Barr sur, dry abn, td 410 ft; McDaniel 4, Alamson Barr sur, sp wo 6⅝ cas, claim 30 ft bro sand showing gas, td 1315 ft. Moses & Wallace's C. L. Daniels 1, Isabel Hanks sur, dk. Hopper et al's Cameron 1, W. A. Lagrone sur, lcn.

SHELBY COUNTY—Sloane Prosp. Co.'s T. B. Sandford 1, M. M. Vann sur, sp 12-inch cas 300 ft, td 400 ft; Windham 1, A. H. English sur, elev 307 ft, 10-inch 180 ft, cored sand showing oil 2652-69 ft, arr set 6⅝ cas, td 2669 ft. Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd 3111 ft. E. L. Chapman's Pickering Lbr. Co. 1, C. F. Henry sur, 10-inch 240 ft, dr 3025 ft. Maulding et al's Frost Lbr. Ind. 1, A. B. Fountain sur, 12-inch 500 ft, dr shale and gumbo 1620 ft. H. H. Gracey's J. A. Morrison 1, Wm. English sur, sp dr 100 ft. I. M. Bradley et al's J. J. Asberry 1, G. W. Mitchell sur, dr black lime 813 ft. T. A. Martin's J. A. Bush 1, Alfred Lindsey sur, dk. Joiner et al's Foster & Billingsley 1, J. Bowlin sur, dk. Schultz et al's Hughes 1, J. Clay sur, rig.

SABINE COUNTY—Loring Oil Co.'s Nona Mills Lbr. Co. 1, Jas. Mason sur, dry abn, td 4803 ft.

KANSAS

MORTON COUNTY — Hydraulic Oil Co., State land 1, nw se, 22-34-43w, sd 3460 ft.

COWLEY COUNTY—Fisher et al, Hunt 1, c sw se se 11-34-3e, ru and sd.

SUMNER COUNTY—Spencer et al, Porter 1, ne sw se se 11-34-3e, rig. Otstot et al, Warlow 2, ce se nw se, 22-33-3w, dr 1360 ft.

COWLEY COUNTY—Lehman et al, Hill 1, se ne 27-33-4e, spd. Roth and Farrout, Reidy 1, c sw nw ne, 8-32-4e, sd 1040 ft.

HARPER COUNTY—Beeler et al, Bear 1, c ne, 21-31-6w, td 1830 ft sd.

FORD COUNTY—Carter et al, Community-Everett 18, c ne, 22-29-21w, (6000 ft test) dr 3288 ft.

SEDGWICK COUNTY — Buck et al, McNanaman 1, c ne nw nw 2-20-1e, 10-inch 2301 ft, hfw 2295-2370 ft, ts 2440 ft, sd.

FORD COUNTY—Swain et al, Kenthorn 1, c nw, 21-25-24w, 5-inch 4600 ft, dr 4880 ft.

STAFFORD COUNTY — Rosenthal, Stanolind & Amerada, Gray 1, c ne, 11-24-13w, dr 1525 ft.

RENO COUNTY — Shell & Continental, Blake 1, sw se se, 23-23-4w, T. chat 3256 ft, 8-inch 3267 ft, td 3308 ft, 8½M gas S. I.

MARION COUNTY—Maidwell, La Master 1, nw c, 31-22-4e, sd 650 ft.

COFFEY COUNTY—Hegberg et al, Kroft 1, se sw se 30-22-14e, 10-inch 818 ft, td 1300 ft, sd. Roberts et al, Hay 1, sw se nw 32-22-15e, td 1250 ft, sd.

BARTON COUNTY—McCool et al, Tsern 1, c sw se ne 12-20-11w, td 1600 ft, sd.

LYON COUNTY—Sheedy et al, Brown 1, c w½ se, 10-20-11e, dr 550 ft.

RUSH COUNTY—Dewey & Mitchell, Greenwalt 1, c sw, 17-19-16w, 2490-2500 ft hfw, dr 2670 ft.

RICE COUNTY—Skelton Oil, Ott 1, c se se 16-19-14w, 8-inch 2090 ft, dr 2115 ft. Deitrick & Langston, Purcell 1, nw c, 33-19-9w, td 1265 ft, ur 12-inch.

McPHERSON COUNTY — Henderson & Holden, Sommerfield 1, c ne sw, 23-19-1w, 5-inch 5445 ft, 3467-72 ft hfw, dr 3561 ft.

BARTON COUNTY—Syndicate Oil, Boertz 1, c nw se ne 13-18-12w, dr 2440 ft.

RICE COUNTY — Allison & Fitzwilliams, Blake 1, ne nw, 9-18-10w, rig. McFadden & Shell, Jennings 1, c sw ne nw 29-18-6w, pb to sg 1130 ft.

NESS COUNTY—Gypsy's Coleman 1, c sw ne 25-17-25w, 3000 ft wih fsg liner 4690 ft td.

ELLSWORTH COUNTY—Gilmore Oil Co. et al's Sturn 1, nw sw 31-17-9w, est ¶2½ 2480-85 t. sil 3243 ft set 5-in liner at 3245 ft dr 3255 s.s.o.

MORRIS COUNTY—Urschell et al's Bersuch 1, c nw se nw 10-17-7e, ru and sd.

ELLSWORTH COUNTY — Alladin et al's Stoddenberg 1, c sw 22-15-10w, td 1130 ft and co.

SALINE COUNTY—Stanolind et al's Martin Community 1, ne se se 3-16-3w, k.c.l. 2168 ft 2395-2400 hfw 10-in 2530 ft td c.o.

MORRIS COUNTY—Hankenson et al's Cessnum 1, sw se 24-16-9e, sd 2210 ft.

FRANKLIN COUNTY—Fields et al's Usher 1, se c 35-16-17e, sd 400 ft.

RUSSELL COUNTY—Hall et al's Mills 1, se sw se 30-14-13w, 8-in 2333 ft dr 2720 ft.

ELLSWORTH COUNTY — Milton et al's Kaster 1, se ne 6-14-9w, td 2420 ft ur 8-in. Hershey et al's Schaltz 1, c ne 9-14-8w, sd 1925 ft.

OSAGE COUNTY—Riggs-Smith's Wood 1, c se nw 31-14-15e, 10-in 1050 ft sd.

RUSSELL COUNTY — Austin Drlg. Co.'s Rockefeller 1, se c 6-13-12w, 3320-25 hfw td 3374 ft sd.

SALINE COUNTY—Twin Mounds Oil Co.'s Weis 1, c w½ ne nw 30-13-4w (owd) 19-in 1010 ft sd 2710 ft.

DICKINSON COUNTY — Severs et al's Livingood 1, ne sw 13-13-2e, sd 3850 ft.

RUSSELL COUNTY—Gilbreath et al's Bratton 1, c ne 33-11-13w, td 3058 ft dr 6-in.

GRAHAM COUNTY — Schleimeyer et al's Clark 1, c sw ne ne 11-9-25w, 6-in 4160 ft dr 4186 ft.

CLAY COUNTY—Nebraska Oil's Tivier 1, sw c 19-8-9e sd 2500 ft.

SHERIDAN COUNTY — Flo et al's Shoemaker 1, se sw sw 27-27-26w 10-in 1178 ft sd 1610 ft.

ROOKS COUNTY—Empire's Holsman 1, c sw ne se 17-7-20w 8-in 2770 ft sd 2885 ft.

WASHINGTON COUNTY—Simcox's Penwell 1, nw se ne 16-3-3e, sd 1720 ft.

RAWLINS COUNTY—Danciger et al's Unknown 1, sw c 3-2-35w, d4 3200 ft.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros., Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al, Sornick 1, nw c se, hfw 2070-2170 ft, sd 2700 ft. T 26n, R 1w, Sec. 32, Boucher et al, Jefferson 1, ne c sw, sd 3502 ft.

HARPER COUNTY—T 25n, R 20w, Sec. 12, Empire, Bruce 1, sw c ne ne sw, sd 7936 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden, Collmer 2, ne c se ne sw, sd 5640 ft, lost tools.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al, Acre 1, c sw ne, show gas 5298-5303 ft, sd 5330 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, se c nw, sd 5850 ft.

NOBLE COUNTY—T 20n, R 1e, Sec. 12, Barnsdall et al, Mkisch 1, nw c sw, sd 4926 ft.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma, Phillips 1, c nw sw, sd 4600 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healey et al, Quier 1, se c sw, sd 3970 ft.

KAY COUNTY—T 28n, R 3e, Sec. 24, Summitt Drlg. Co., Hays 1, nw ne nw, show oil 3185-3208 ft, sd 3250 ft.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al, McFadden 1, ne c sw, rig. T 22n, R 5e, Sec. 2, Sherry et al, Milsap 1, se c sw, sd 1750 ft. T 20n, R 5e, Sec. 6, W. A. Rookstool, Berry 1, nw ne sw, sd 1951 ft, show gas.

LINCOLN COUNTY—T 12n, R 6e, Sec. 8, Atlantic et al, Beebee 1, sw ne sw, lcn. T 13n, R 6e, Sec. 9, Mid-Continent et al, Lillie 1, ne c se, dr 3436 ft.

OKFUSKEE COUNTY—T 12n, R 10e, Sec. 3, Shepperd et al, Shepperd 1, se nw sw, sd 3690 ft. T 11n, R 10e, Sec. 4, M. H. Watts, Champlin 1, sw c, lcn.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, sw nw se, show gas 5654-64 ft, dr 5691 ft. T 8n, R 14e, Sec. 14, C. O. Cannady, Smith 1, sw c ne nw nw, rig and tools. T 7n, R 14e, Sec. 5, C. O. Cannady et al, Travis 1, c sw ne, rig.

LATIMER COUNTY—T 6n, R 19e, Sec. 16, P. English et al, Weaver 1, c nw se, sd 1542 ft.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff, Trustee, St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al, Bruner 1, se c nw, rig.

POTTAWATOMIE COUNTY—T 8n, R 3e, Sec. 21, Droppleman and Amerada, Jones 1, se c nw, cored show oil 4715 ft. T 6n, R 4e, Sec. 6, Magnolia, Harris 1, nw c sw, dr 4150 ft.

SEMINOLE COUNTY—T 6n, R 7e, Sec. 15, Magnolia, Powell 1, nw sw se, dr 4111 ft.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Ute Oil Co. et al, Williams 1, c sw, dr 4520 ft. T 11n, R 26w, Sec. 4, J. J. Rook & Palmer, Davis 1, c nw ne, (owd) sd 2956 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey, Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Snodgrass et al, Blocker 1, nw c, dr 1845 ft. T 8n, R 18w, Sec. 21, Burns & Prince, Dock 1, sw c, sd 150 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Good and Dowell, Cliffel 1, nw c, sand 1462-1501 ft, sd 1615 ft. T 7n, R 21w, Sec. 23, H. A. French, Murphy 1, sw nw se, sd 1600 ft.

STEPHENS COUNTY—T 1n, R 8w, Sec. 25, Rose Southard, McKinney 1, ne c, sd 1063 ft.

HUGHES COUNTY—T 5n, R 11e, Sec. 15, J. J. Wright, Roberts 1, se c sw, 2M gas 915-18 ft, sd 1645 ft.

GARVIN COUNTY—T 2n, R 2w, Sec. 24, Malernee, Phillips 1, ne c sw, dr 60 ft.

COAL COUNTY—T 2n, R 8e, Sec. 10, Whitney et al, Miller 1, se c ne, (owd) sd 760 ft. T 1n, R 8e, Sec. 35, W. E. McCraw, Stiring 1, ne c se, dr 1030 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Guinn 1, nw c, show gas 360-72 ft, sd 500 ft.

BRYAN COUNTY — T 7s, R 10e, Sec. 8, Bryan Oil Co., Childs 1, ne se sw, sd 660 ft.

COLORADO

ADAMS—N. M. Slatt's 1, se 27-26-64w, carry 6⅝-in cas at 3076 ft.

ARAPAHO—McDebb Dr. Co.'s Fitzsimons 1, 7-45-55, fsh 5803 ft.

BACA—A. R. Jones Oil & Optg. Co.'s Boice Cattle 1, 22-34-42w, pull cas at 4965 ft, td 4815 ft.

EL PASO—Utemore Synd.'s Cannon 1, ne 10-16s-66w, sd 1125 ft.

GRAND—Oil Mineral Land, Inc.'s McElroy 1, 14-2n-81w, dr 586 ft.

HUERFANO—Parker Club, Inc.'s Fee 1, se 4-28s-68w, run 5 3/16-in cas, td 4116 ft.

JEFFERSON—Ruby Hill O & G Co.'s Braden 1, se 24-4s-59w, dr 3909 ft.

LAS ANIMAS—Oklahoma Dr. Ass'n's Radcliffe 1, ne 28-28-52, sd 100 ft.

LA PLATA—McGarr Pet. Co.'s Pinon Mesa 1, ne 34-33n-12, lcn. Klem Pet. Corp.'s Olbert 1, se 9-25n-12w, sd 3125 ft. Murchison Oil Co.'s Doescher 1, nw 29-33n-12, prep to res 1225 ft.

LINCOLN—Eastern Colo. Oil Corp.'s State 1, 36-14n-57w, ur 4¼-in cas to 3370 ft.

MOFFAT—Mountain Fuel Supply's State 2, tract 37-12-100, 15M at 2268 ft.

MONTEZUMA—G. H. Talcott et al's McElmo 1, 7-35n-16w, sd 635 ft. Haller et al's Carr 2, sw 33-36n-14w, dr 160 ft.

MONTROSE—Uncompahgre O & G Co.'s Title & Trust 2, 27-50n-10w, dr 220 ft.

MORGAN—Ind. Terr. Illum. Oil Co.'s State 1, ne 16-1n-57w, sd to install rotary 4090 ft.

PUEBLO—Anchor Oil Co.'s Easley 1, sw 35-22s-57w, dr 528 ft.

PARK—So. Park Oil Co.'s Milligan 1, se 13-9s-76w, dr 1990 ft. So. Park O & G Co.'s Easche 1, ne 5-9s-76w, dr 1665 ft.

RIO BLANCO—California Co.'s Raden 1, se 30-2n-102w, pred to sp. Magnolia Pet. Co.'s Maddock 1, se 9-2s-96w, bldg road.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4-56, sd 1510 ft.

WELD—Reiter-Foster and Platte Valley Pet. Corp.'s Johnson 1, nw 24-6n-61w, moving in.

MONTANA

BIG HORN—Continental Oil Co.'s Lynde 2, se 21-6s-35e, sd 3405 ft.

CARBON—Spomont Pet. Co.'s Cruse 1, 32-6s-18e, dr 100 ft.

CASCADE—Andover Oil Co.'s Floweree 1, se 29-21-2w, running cas and co, td 1405 ft. Lone Star Oil Co.'s McLean 2, se 13-21-3e, sp.

CHOTEAU—Northern States Oil Co.'s Woodward 1, sw 20-14n-24e, dr ahead in wet hole 2400 ft. Melton Corp., 24-21n-17e, cas set 2825 ft, dr ahead. Pownam Oil Co., 24-19-11e, fsh 150 ft. Williston-Shelby O & G Co.'s Flack 1, ne 12-28-11, wso 2830 ft.

GALLATIN—Gallatin Valley Oil Co., nw 1-1n-4e, dr below 330 ft.

GLACIER—Fulton Pet. Corp.'s Blackfeet 1, ne 28-36n-12w, dr out cemt 1470 ft. B & H Oil Co.'s Haines 1, se 2-34-6w, cemt wso, td 2762 ft. Jeffries-Hoerr's Dawson 1, ne 7-31-12w, resum 3000 ft. Montana Utilities Co.'s Highland 1, sw 13-34-6w, sd 20 ft.

GOLDEN VALLEY—Texas-Pacific's 1, sw 21-8s-21e, hfw 4000 ft. J. F. Dealey et al's 1, ne 28-5n-22e, co.

LIBERTY—Northland O & G Co.'s Yurman 1, 32-33n-5e, fsh bit 3500 ft. Sunburst, McLaren 1, se 8-37-6e, sd 3115 ft. C. G. Howard's Schoonover 1, se 18-36-6e, dr 1700 ft. Perkins Brown 1, ne 24-35-4e, rig up.

PETROLEUM—Minnesota-Flatwillow, 7-11n-31e, run cas, td 2600 ft.

ROSEBUD—Prairie O & G Co., 1-X, 26-10-39e, mak set smaller slips, td 2415 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, sd 150 ft. California Co.'s Sullivan 1, nw 34-27-7w, rigging.

TOOLE—Liquid Gold Oil Co.'s Robert 1, ne 25-36-12, dr below 2250 ft. International Roy. Hold, Co.'s Henry 1, sw 26-35-36, pulled 8-in cas, 2650 ft. A-1 Pet. Co., se 24-36-1e, sd 1555 ft.

YELLOWSTONE—Peter Antonioli, 21-2n-25e, wait cas 1600 ft.

NEW MEXICO

CHAVES—Warman Oil Trust's Siebert 1, ne 27-13-24, dr 2655 ft. Neal et al's Russell 1, nw 21-14s-25e, dr 2234 ft.

DE BACA—Matador Oil Co.'s Wood 1, se 6-4n-20e, wtg for cas, td 3010 ft.

GUADALUPE—N. M. Prod. & Ref. Co.'s McMullen 1, 24-5n-16e, prep to drill.

HARDING—Kummbaca O & G Co.'s Kerlin 1, se 34-21s-30e, much gas at 825 ft, sd.

LUNA—Angelus Oil Mining Ass'n 1, se 20-21s-10w, wtg cas, 6085 ft.

McKINLEY—J. W. Halsell's Santa Fe 1, 17-18-9w, sd 3255 ft. Williams et al's A. T. S. F. 1, se 19-18n-8, sd 1900 ft. United Kern Pet. Inc., sw 1-18n-11w, lcn. Dysart et al's Dysart 2, ne 14-14n-10w, prep to set 8¼-in cas at 1285 ft.

MORA—Fulton Pet. Co.'s Santa Fe Dioxice Co.'s Wagomound 1, ne 14-19-21, dr 850 ft.

OTERO—Ernest et al's 1, se 20-25s-7e, wtg for equip at 1005 ft. Pasotero Oil Corp.'s Dexter 1, nw 22-24s-12e, moving in.

RIO ARRIBA—Berrenger et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pet. Co.'s Gov't 1, se 14-30n-7w, sd 250 ft. Governador Oil Co.'s 1, se 12-29n-7w, carry 8¼-in cas 880 ft.

SAN JUAN—Kutz Canon O & G Co.'s Day 1, se 20-28n-10w, dr 3066 ft. Rio Grande Dev. Co.'s 2, 9-29-11, sd 1525 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, cemt, td 4730 ft. San Juan Leaseholds' Bowman 3, ne 30-30-15, sd 2685 ft. Reserve Oil Co.'s Reserve 3, se 36-22n-14w, ur to 735 ft. R. C. Oswell et al, nw 34-30n-11w, dr 81 ft.

SAN MIGUEL—Pioneer O & G Co.'s Thunderbird 1, nw 14-15n-16e, wait 2340 ft. Starr Oil Co.'s Adams 1, ne 25-17-16e, dr 3530 ft. Cibola Pet. Co.'s Crown 1, se 9-13n-14e, sd 750 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 12-12n-22e, prep to res 1415 ft. Con-O-Kul Oil's Cherryvale 1, ne 24-17n-21e, dr 471 ft.

SANTA FE—Jones, Owsley et al's Cantwell 1, 5-10n-9e, ready to sp 85 ft.

TORRANCE—Williams et al's Staplin 1, ne 16-8n-10e, ready to res 1643 ft. J. B. Witt O & G Co.'s Kutchem 1, 12-7-7e, show gas 1740 ft.

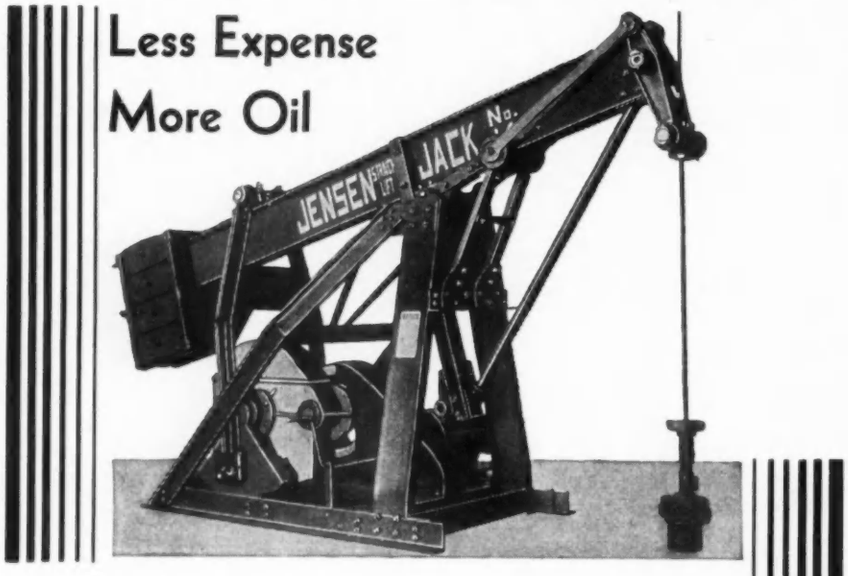
VALENCIA—Acme Oil Co.'s N. M.-Ariz. Land Co.'s 1, 26-6-3, install rotary 4990 ft. Harlan et al's Harlan 1-A, 5-6n-2e, abn 6900 ft.

WYOMING

BIG HORN—Westland Oil, Inc., 24-54-95, gas at 150 ft. Wisconsin Holdings, 5-55-97, sd 665 ft. Yellowstone Pet. Co.'s 1, 7-87-97, sd 4080 ft.

CARBON—Midwest Refining Co.'s U. P. 1, 27-11-81, resum 1810 ft. Pet. Expl. Co. of Calif., 29-23-89, fsh bit 2535 ft.

CONVERSE—Converse O & G Co., 27-33-72,



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sd 1410 ft. Pioneer Oil Co., 5-31-70, to dr new test.

FREMONT—Texas Prod. Co.'s State 1, 36-33-95, sd for orders 4485 ft. P & R 1, 33-34-92, sd 4906 ft. Yellowstone Oil Co.'s 1, 15-39-92, dr 600 ft. Ward Oil & Gas Co., 28-34-90, dr 2100 ft. Wiebolt et al, 2-35-99, dr 1525 ft in red beds.

JOHNSON—R. C. Tarrant et al, 4-43-82, dr below 2150 ft.

LINCOLN—Mountain Oil Corp.'s 1, 36-25-116, td 1500 ft. Wyo. Prod. Co., 14-42-113, wait for 8¼-in cas at 1555 ft.

NATRONA—Summit Oil Co., 21-33n-80w, sd 1220 ft, wait equipment. Midwest's 11, nw 32-34n-77, sd 5340 ft. Cuyler Oil Co., 23-36n-85w, run 8¼-in to bottom at 1253 ft. Golden West Oil Co., 36-36-81, co 1265 ft. Midwest's Midway 1, ne 23-35n-79w, dr 6500 ft.

NIOBRARA—West Virginia Synd., 7-35-62, td 987 ft, cas trouble. Phillips Pet. Co., sw se 32-34n-64w, oil show 375 ft.

PARK—Resolute Oil Co., 71-57-101, dr 8510 ft, flow by heads. Grebo Royalties, Inc., 3-47-100, resum at 100 ft.

SWEETWATER—Vermillion Oil Co.'s 1, se 16-12-99, moving in to res 3465 ft.

UINTA—Park City O & G Co., nw 6-15-113, dr below 2400 ft. Doheny interests, 6-14-118, resum 3216 ft.

WASHAKIE—Dakota-Wyoming Oil Co., ne 24-47-90w, show 200 ft, to be cased off. Ohio Oil Co., lot 14, 9-45-92, dr 3220 ft.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, prep to cemt 15½-in cas at 1000 ft.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
CADDO PARISH (Rodessa)—		
United Gas Pub. Serv. Co., Emmons 1, 27-23-16	¶38½	5570
CLAIBORNE PARISH—		
Baird Bros. et al, Whittaker 1, 30-20-7w	*	3000
CONCORDIA PARISH—		
Joe Marr et al, Maxwell 1, 35-3n-8e	*	3622
RED RIVER PARISH—		
Lucky Strike Oil Co., Chaffraix 1, 33-12-10	*	3010
SABINE PARISH (Zwolle)—		
W. M. Coates, R. L. Gay 1, 1-7-12	50	2332
David M. Lide, Ponder 1, 15-7-11	5	2800
Ponder 2, 15-7-11	*	2420
Lyons & Neely, Byrd 1 (formerly Baird Co. 1), 1-7-11	1200	2466

BIENVILLE PARISH—Jamestown Synd.'s Lawhon 1, sw ne 15-16-8w, show gas in sandy shale (Tokio), 6-in cas 2845 ft, fsh cas td 2854 ft.

BOSSIER PARISH — Andrews & Davlin's Nattin 1, 15-22-14, sd 2950 ft. Rambaugh et al's Allison 1, 10-19-13, sd 1100 ft. Flint River Oil Co.'s DeMoss 1, se nw 22-22-13, 12½-in cas 236 ft, dr 1635 ft. Hankins et al's Newell 1, ne ne 12-19-11, dr 380 ft (upper Trinity test). H. I. Morgan's Kendricks A-13, nw se 22-19-11, 10-in cas 135 ft, dr shale and shells 1662 ft (upper Trinity test). D. L. Perkins et al's Ardis 1, ne sw 13-15-11, dk. Glassell 1, se ne 23-15-11, lcn.

CADDO PARISH—United Gas Pub. Serv. Co.'s Emmons 1, ne sw 27-23-16, 12½-in cas 363 ft, 9-in cas 3635 ft, 6⅝-in cas 5396 ft, tested 4,635,000 cu ft gas r.p. 2340 lbs at 5541 ft, gauged 38,516,000 cu ft gas 2330 lbs r.p. td 5570 ft. Gordon M. Garry's Hatcher 1, nw ne 11-17-15, lcn abn, had been planned as 5500 ft test. Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, 15¾-in cas 200 ft, 12½-in cas 1129 ft, dr hard shale 2400 ft (to go to 5500 ft). United Pub. Serv. Co.'s Smith 1, nw ne 33-23-16, rig (5500 ft test.)

CATAHOULA PARISH—National Drilling Co.'s Marsh McMillan 1, 26-9-6e, 6⅝-in cas 2796 ft, tested sw, sd 3097 ft.

CALDWELL PARISH—Hudson et al's Burton 1, 36-12-2e, sd 2799 ft. Carter Bell et al's Taylor 1, 42-14-4e, rig.

CLAIBORNE PARISH—Baird Bros. et al's Whittaker 1, 30-20-7w, tested 5 fourbles mud and sw 2964 ft, dry abn td 3000 ft.

CONCORDIA PARISH — United Gas Pub. Serv. Co.'s Hughes 1, 49-8n-10e, sp, cemtd 12½-in cas 198 ft. Joe Marr et al's Maxwell 1, 35-3n-8e, dry abn td 3622 ft.

DE SOTO PARISH—W. H. Weichert's H. Smith 1, 31-14-15, top gas sand 1653 ft, top chalk 1901 ft, sd 2350 ft. Neff et al's Ramsey 1, 33-13-16, 12¼-in cas 80 ft, bit lost in hole, sd 3000 ft. E. T. Oakes' Johnson 1, 30-13-15, sp.

NATCHITOCHES PARISH—C. M. Talley et al's Talley 1, 29-11-10, tested dry, show oil in bro sand and shale 1256-69 ft, dry 1380 ft, sd, wo. W. M. Coates et al's Collins 1, sw nw ne 28-9-10, base Midway chalk 2612 ft, base hd lime 4039 ft, tested 15 joints mud and sw 4020-91 ft, ta 4091 ft. J. W. Cooper et al's Cooper 1, 35-11-10, sd 3156 ft. Cooper 2-A, 35-11-10, top chalk 1400 ft, sd 1515 ft.

RED RIVER PARISH—Lucky Strike Oil Co.'s Chaffraix 1, 33-12-10, junked, abn td 3010 ft.

SABINE PARISH—J. C. Walton's Sabine 1, ne nw 11-7-12, 6⅝-in cas 2119 ft, sd 2376 ft. Lucey Prod. Co.'s Cooper 1, 30-8-11, top chalk 2306 ft, 6⅝-in cas 2270 ft, hfo, wosr, td 2620 ft. Triangle Pet. Co.'s Sabine 2, 36-8-12, sp 10-in cas 85 ft, dr 500 ft. J. J. Kean's Belton 1, 31-9-13, sd 1400 ft. D. M. Lide's Ponder 1, 15-7-11, top marl 2393 ft, top chalk 2407 ft, 6-in cas 2385 ft, flowing by heads est 5 bbls day, td 2800 ft. Ponder 2, ne nw 15-7-11, 10-in cas 102 ft, 6⅝-in cas 2364 ft, dry abn, show oil td 2420 ft. Jno. Woodley's Sabine 1, ne se 12-8-12, 10-in cas 103 ft, 6⅝-in cas 2310 ft, top marl 2312 ft, base marl 2392 ft, arr bail, td 2403 ft. H. W. Perritt's Bowman-Hicks 4, se ne 2-7-12, dk. Boring 1, ne nw 11-7-12, 10-in cas 85 ft, 6-in cas 2238 ft, tested dry at 2355 and 2410 ft, hfo, arr pump, td 2602 ft. A. H. Thames' Edwards Est. 1, ne se 8-8-13, 10-in cas 100 ft, sd for water 1200 ft. R. L. Gay, Tr.'s Long-Bell A-1, ne nw 10-8-13, 12½-in cas 105 ft, top marl 1897 ft, base marl 1950 ft, dr chalk 2300 ft. Jordan Drilling Co.'s La. Long Leaf 2, sw se 3-7-11, rig. Gautier et al's Meshell 1, se nw 30-8-12, sd 1360 ft. Ohio Oil Co.'s Bowman-Hicks 8, nw ne 2-7-12, 10-in cas 199 ft, 6⅝-in cas 2200 ft, flowing est 200 bbls oil daily, td 2470 ft. Bowman-Hicks 9, nw se 35-8-12, lcn. Bowman-Hicks 10, sw ne 35-8-12, lcn. Bowman-Hicks 11, sw se 2-7-12, lcn. Durham Oil Co.'s Polly 1, sw ne 18-8-12, 10-in cas 105 ft, 8¼-in cas 2087 ft, base chalk 2595 ft, sd 2722 ft. Sabine Royalties Co. Inc.'s Bill Hill 1, nw ne ne 5-7-11, 10-in cas 105 ft, top marl 2217 ft, 6-in cas 2230 ft, 1900 ft oil in hole, wosr, td 2506 ft. Skinner 1, se sw nw 5-8-11, dr 1000 ft. Diffie & Barrett's Lites 1, 34-8-11, 10-in cas 105 ft, sd. Nat. Gas Prod. Co.'s Sabine 1, se nw 11-7-12, 10-in cas 40 ft, cemtd 6-in cas 2302 ft. Sabine 3, 1-7-12, 6-in cas 2222 ft, dr 2290 ft. Hawkins et al's Moran 1, se ne 1-7-11, 10-in cas 100 ft, 6-in cas cemtd 2428 ft, tested dry, show oil and gas 2493 ft, arr deepen. Lyons & Neely's Byrd 1, (formerly Baird Co. 1), se ne sw 1-7-11, 10-in cas 100 ft, 6-in cas 2410 ft, top marl 2408 ft, flowing 1200 bbls oil daily, td 2456 ft. Texas Co.'s Stills 3, nw sw 33-8-11, sp, cemtd 6⅝-in cas 2230 ft. De Latin 1, nw se 3-7-11, dk. W. M. Coates' R. L. Gay 1, sw sw nw 1-7-12, 6-in cas 2222 ft, flowing 50 bbls daily, td 2322 ft. R. L. Gay 2, 1-7-12, lcn. Pelican Nat. Gas Co.'s La. Long Leaf 9, sw se 3-7-11, 10-in cas 85 ft, dr 1500 ft. Stovall Drilling Co.'s Nulton 1, 1-7-13, rng. Sabine Prod. Co.'s Pearce 2, se nw 10-7-11, dk. Eddie Self's Jacobs 1, sw se 1-7-11, dk.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12, fsh ds 3475 ft.

WEBSTER PARISH—D. M. Coyle's Frazier 1, ne se 27-23-11, dk. Cassidy & Davis' Nickerson 1, ne sw 29-23-10, sd 160 ft. Red Hawk Oil Co.'s Matthews 1, se nw 11-23-9, top chalk 2480 ft, 6-in cas 2764 ft, bro formation 2782-97 ft, showed oil bailed down 2400 ft, small show oil, cas collapsed, so, wo, td 2797 ft.

WEST CARROLL PARISH — United Gas Pub. Serv. Co.'s Pioneer Cooperage 1, 29-21-8, 15½-in cas 167 ft, cemtd 10-in cas 867 ft.

MISSISSIPPI

CLARKE COUNTY (Quitman Dist.)—Gulf Ref. Co.'s Box 1, nw se 11-2n-15e, elev 221 ft, 15½ cas 105 ft, 10-in 922 ft, top Midway black shale 2205 ft, top Selma chalk 2637 ft, base chalk 3703 ft, top Tuscaloosa red beds 4205 ft, dr gray sand and red shale 4418 ft.

CLAY COUNTY—Ohio Oil Co.'s Cantrell 1, ne ne 16-15-5e, elev 270 ft, 13 3/8 cas 1389 ft, 9⅝ 2929 ft, dr water sand 3649 ft.

CHICKASAW COUNTY — Hightower & Golsan's Fleming 1, 20-13s-3e, sd wo 6-inch cas, td 1505 ft.

COVINGTON COUNTY (Collins Dist.)—Gulf Ref. Co.'s Pope 1, 35-8n-16w, rig up to deepen, td 3000 ft in Wilcox.

GRENADA COUNTY—Carter Oil Co. et al's Dubard 2, se nw 18-22-4s, cemtd 12½ cas 720 ft, td 800 ft.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet., Inc.'s, J. H Keyes 1, nw ne 21-2n-10e, 15½ cas 104 ft, top ~~ae River 1090 ft, dr Cane River 1450 ft.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, sw ne 2-15-19, sd in brown sand 3007 ft. P. J. McAlpine's Cowart 1, ne sw 2-12-19, 10-inch 694 ft, 8¼ cas 1276 ft, dr white lime 2075 ft. Associated Royalties' School Board 1, sw se 16-15-17, sd 60 ft.

RANKIN COUNTY (Jackson Dist.)—Love et al's Muse 1, se se 32-7-4e, 12½ cas 600 ft, dr limey shale 3550 ft. Love et al's Moore 1, se nw 28-6-2e, ta 900 ft. Atkisson et al's Valentour 1, nw nw 18-5-2e, rig.

SCOTT COUNTY—Culley et al's Owen 1, se ne 2-8n-9e, dk.

WARREN COUNTY (Vicksburg Dist.)—Eagle Lake O&G Co.'s Kiger 1, sw se 9-18n-2e, sp. Dixie Pet. Co.'s Pat Henry 1, se ne 36-17n-4e, 12½ cas 120 ft, dr shale strks sand and pyrites 1866 ft. Vicksburg O&G Co.'s Dornbusch 1, sw ne 8-18n-5e, ta 1600 ft.

WINSTON COUNTY (Louisville Dist.)—Miss. Drilling Co.'s Scarbrough 1, nw nw 15-13n-14e, base red beds 2739 ft, cored sand and limey shale 2931-37 ft.

YALABOUSHA COUNTY (Water Valley Dist.)—J. D. Collett et al's Blackmer 2, sw nw 14-11s-4w, 12½ cas 103 ft, recemted 8⅝ cas 2428 ft, arr dr plug second time, td 2850 ft.

ALABAMA

MADISON COUNTY — Tennessee Valley O&G Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, sw ne 30-20-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, 10-inch 130 ft, driving 8-in pipe at 920 ft. Hobson Bros. 1, 9-8-2w, ta 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, sd 700 ft.

TENNESSEE

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, dr gray lime 2196 ft.

ARKANSAS

CHICOT COUNTY—H. R. Smith's Lytle 1, 31-18-3, cemtd back to 2865 ft, ta old td 2925 ft.

CLAY COUNTY—S. C. Jeffus, Tr.'s, Underwood 1, nw ne 4-20-8e, sd cur titles 1214 ft.

CLEBURNE COUNTY—Donnell et al's Fee 1, 33-11-9, sd 3740 ft.

COLUMBIA COUNTY—Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, 12½ cas 75 ft, claim oil sand 489-502 ft, dr 718 ft.

DALLAS COUNTY—Jno. James, Tr.'s Fordyce Lbr. Co. 1, ne nw 11-9s-15w, 10-inch 176 ft, tested dry thru ds in soft white sand 2502-10 ft, arr core, td 2510 ft. E. C. Brewer, Tr.'s, Hillman 1, se ne 20-10-13, 10-inch 138 ft, sd in rock 2846 ft.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-3n-19w, cas pulled hfsw, ta 3756 ft.

GRANT COUNTY — Spann & McClung's Sarah Page 1, sw nw 3-3-12, sd wo cas in soft white sand, td 1024 ft.

HOT SPRINGS COUNTY—Jno. Watkins, Tr.'s, Cunningham 1, 11-5-16, sd 220 ft.

JOHNSON COUNTY—Blackwell O&G Co.'s Wyver 1, 21-8-23, ta 5600 ft.

LA FAYETTE COUNTY—Crawford Drilling Co.'s Vaughan 1, 25-19-25, rig. McIver et al's Hattle 1, nw ne 1-20-26, 12½ cas 115 ft, sd 2520 ft. Smitherman & McDonald's Bodcaw 1, se nw nw 16-15-22, 12½ cas 42 ft, 8¼ cas 1176 ft, 6⅝ cas 1193 ft, sand 1194-98 ft, sd hfsw, td 1199 ft.

LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LINCOLN COUNTY—L. B. Cook, Tr.'s, McGehee Pltg. Co. 1, ne sw 5-8s-7w, 12½ cas 90 ft, dr 320 ft.

LITTLE RIVER COUNTY—Fay Roberts Oil Co.'s Russell 1, nw nw 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks

1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MILLER COUNTY—E. & F. Oil Co.'s E. L. Beck 1, 36-15-26, 6⅝ cas 2792 ft, 4½ cas 2957 ft, sd 2968 ft. Bullock Oil Co.'s Hervey 1, 2-15-26, junk in hole, ta 2832 ft. East Texas O&G Co.'s Hervey 1, 2-15-26, ta 890 ft. Fitzwater et al's Beck 1, sw se 33-15-26, 10-inch 85 ft, sd. J. D. McRae's Smith 1, nw se 28-15-26, dk.

OUACHITA COUNTY—Copenhaver et al's Elliott 1, se se 11-15-17, 6-inch 2185 ft, tested dry, sd 2210 ft.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, show heavy oil 567 ft, sd in lime rock 2920 ft. E. R. Henderson's Lee 1, sw se 31-8s-24w, rig.

POPE COUNTY—Ark. La. P. L. Co.'s McFadden & Brooks 2, ne nw 15-9-21, 13 3/8 cas 1900 ft, tested 1 mil ft gas 3285 ft, 8⅝ cas 3415 ft, 8-inch 3451 ft, 5 3/16 cas 4145 ft, hole cleaned of cavings at 4322 ft, dr black sand 4368 ft; Baird 1, se nw 11-7n-20w, 10-inch 1168 ft, 6⅝ cas 3403 ft, dr hard gray sand 4024 ft.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, fsh cas, td 1536 ft. Waldron O&G Co.'s J. G. White 1, sw nw 17-3n-29w, 10-inch 225 ft, sd, wo cas, td 1860 ft (second hole.)

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd after testing sw, td 2515 ft.

SEVIER COUNTY—Tri-State O&G Co.'s Bank of DeQueen 1, s½ sw 34-8s-32w, dk.

UNION COUNTY—Rice et al's Whatley 1, 7-17-15, sd 2186 ft. Southern Prod. Co.'s Wingfield 1, se nw 16-19-15, 10-inch 103 ft, sd 2608 ft. Lion O. R. Co. et al's Guy P. Hayes A-9, sw ne 4-16-15, 12½ cas 270 ft, dr red shale 3055 ft (to go to 5000 ft). Wilson & Chapman's Ned Parker 1, nw se 3-18-13, 10-inch 230 ft, coring shale 3200 ft; Hadley 1, ne sw 3-18-13, 10-inch 102 ft, 600 ft fluid in hole 30 per cent sw, td 3570 ft. Marine Oil Co.'s P. Winn A-2, nw nw 11-18-13, 10-inch 276 ft, dr 2900 ft. Union Sawmill 1, se se 3-18-13, sp 10inch 236 ft, dr 900 ft.

WASHINGTON COUNTY—Taylor et al's Runny 1, 1-13-29, sd 1702 ft. Lincoln Lease Holding Synd.'s Townsite 1, 30-15-32, ta 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, ta 850 ft. Delbert Graves' Cunningham 1, 14-15-32, sd in gray sand 602 ft.

VAN BUREN COUNTY — J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-12, sd while fsh cas, td 5710 ft.

SOUTHERN CALIFORNIA

BASSETT — Huntington Central Oil Co.'s Pellissier 1, 34-1-11, lcn.

BELL—Cudahay Community Oil Assn's No. 1, 30-2-12, 4¾-in cas cmt 1210 ft, td 1330 ft, will drill ahead.

CALABASAS—L. W. Rucker's No. 1, 26-1-17, dr shale 400 ft.

CORONA—Western Gulf's Abacherli 1, 12-3-8, washing out to make test, well pumped about 40 bbls heavy oil, td 3267 ft.

CULVER CITY—Olympic Oil and Realty Co.'s No. 1, 14-2-15, dr shale 5055 ft.

FULLERTON—Brea Canyon Oil Co.'s Fee 47, dr shale 6910 ft. Standard's Bastanchury 1, 21-3-10, plugged to 7730 ft, will continue production test.

HERMOSA BEACH—E. S. Cone's Kellogg-Burdick 1, 6-4-14, dr shale 600 ft. Hermosa Exploration Co.'s No. 1, dr 2755 ft for test. Tulsa Oil Co.'s Hermosa 2, 6-4-14, dr shale 3040 ft. Westwood Pet. Co.'s No. 1, 6-4-14, dr shale 3168 ft.

LOMITA—Heller-Davis Oil Co.'s Hamlin 1, co 3785 ft.

NEWHALL — Electrological Pet. Corp.'s Overman 1, 6-3-16, rig. Guarantee Oil Co.'s Hammond 1, dr shale 2490 ft. O. C. O. Oil Co.'s No. 1, 14-3-16, rig. Rayne Oil Co.'s No. 1, 11-3-16, lcn. Southern California Drilling Co.'s Needham 5, rig.

NEWPORT—Standard's Irvine 1, 26-6-10, dr shale 4540 ft.

NORTH LONG BEACH—Phoenix Oil Co.'s No. 1, lcn.

OCEAN—Hines Pet. Corp.'s Happy Days 1, 8-2-15, dr shale 4935 ft.

OLINDA—Graham-Loftus Oil Co.'s No. 1, 18-3-9, dr shale 7268 ft.

OLIVE—Texas' Olive Community 1, 7-4-9, dr shale 5169 ft.

PLAYA DEL REY — Mesmer City Realty Co.'s No. 1, 24-2-15, dr shale 5200 ft. West Port Oil Co.'s No. 1, 27-2-15, loosening drill pipe, some gas showing.

PUENTE—Guarantee Oil Co.'s Rowland 1, 14-2-10, dr shale 4272 ft. Rucker and Croul's Grazide 2, 22-2-10, dr hard sand 2165 ft.

ROSEMEAD—Rancho Oil Corp.'s Harman 1, 30-1-11, dr gray sand 5980 ft.

REPETTO HILLS—Texas' F. M. 1, 4-2-12, dr hard sand 3368 ft.

SUNSET BEACH—H. Cohen's No. 1, 20-5-11, lcn; No. 2, 20-5-11, lcn; No. 3, 20-5-11, lcn; No. 4, 20-5-11, lcn. Gieck Oil Co.'s No. 1, 20-5-11, dr shale 2220 ft. Whittier-Santa Fe Springs Synd.'s No. 1, 20-5-11, new lcn.

WILMINGTON—W. S. Ewert's No. 1, 20-4-13, lcn; No. 2, 20-4-13, lcn; No. 3, 20-4-13, lcn; No. 4, 20-4-13, lcn. Wilmington Consolidated Oil Co.'s No. 1, dr shale 900 ft. Pacific Coast Pet. Corp.'s Watson 1, 29-4-13, trying to place on production, would not flow, td 3968 ft.

YORBA LINDA—International Pet. Corp.'s Todd 1, 21-3-9, co 2694 ft.

NORTHERN CALIFORNIA

KERN COUNTY

BELRIDGE—Belridge Oil Co.'s No. 27-64, 27-27-20, dr shale 4100 ft; No. 35-8, 35-27-20, dr hard shale 4650 ft; No. 35-33, 35-27-20, sd 3982 ft; No. 35-48, 35-27-20, sd 4760 ft; No. 35-49, 35-27-20, sd 1055 ft. Continental's Result 2, 36-27-20, dr shale 4350 ft. General Pet.'s Berry 1, 30-28-21, dr brown shale 4240 ft. Ohio's Bloemer 1, 36-27-20, sd 5786 ft. Reward Oil Co.'s Associated 4, 34-27-20, dr 5000 ft, will make test. Standard's McPhail 2, co 5430 ft. Texas' Martin 1, 22-27-20, sd 5048 ft. K. C. Wallace's No. 1, 32-29-21, co 4212 ft.

BLACKWELL'S CORNER — F. B. Longstroth's No. 1, 14-26-19, rig. E. J. Miley's No. 1, 17-26-19, rig.

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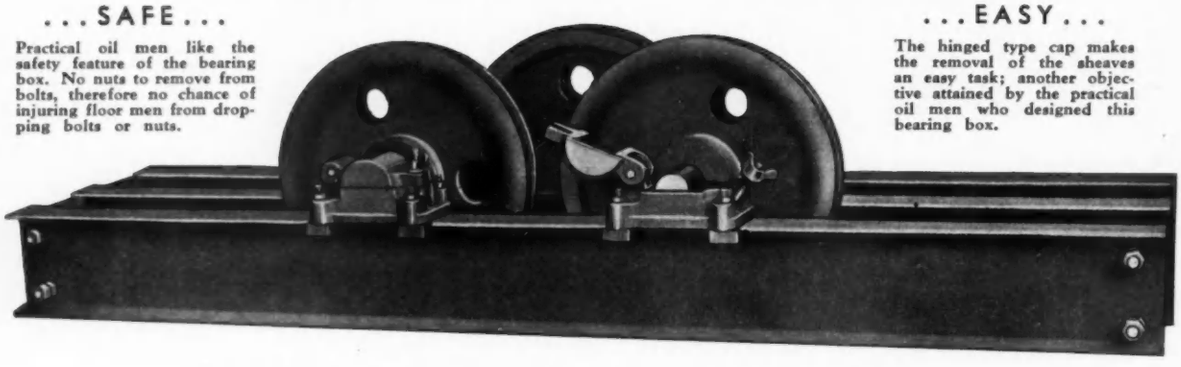

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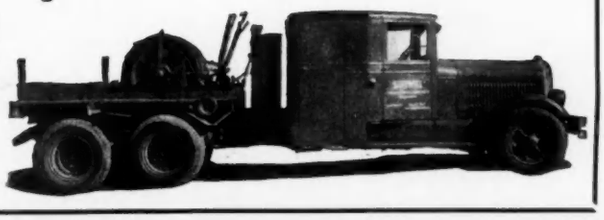

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Salisbury 1A, 7-29-24, will drill out cmt, td 6995 ft, heaving shale and sand.

CARIZZO PLAINS — Panorama Oil Co.'s Panorama 1, 7-31-21, re-dr 2500 ft. Tray-El Oil Co.'s No. 1, 7-32-22, fsh for cas 1280 ft.

DEVIL'S DEN—Standard's Alferitz 1, 14-25-18, dr gray sand 3215 ft.

MOJAVE—Kendall Development Co.'s No. 1, 27-11-9, dr clay.

SEMITROPIC—Shell's Williams 1, 17-27-23, swabbing water, td 9700 ft, plugged to 6915 ft for test of upper showings.

SHALE HILLS—Rio-Cal Oil Co.'s No. 1, 2-27-18, re-dr 2315 ft.

TEMBLOR HILLS—Kent and McDonald's No. 1, 3-32-22, cmt 12½-in cas 1700 ft.

WEED PATCH—Alpine Oil Co.'s Di Giorgio 1, 13-31-29, fsh 3707 ft. Mohawk Oil Co.'s Earl 1, 4-31-29, rigged to sp; Wharton 1, 32-30-29, flowing salt water, td 6150 ft. Osborn and Colter's Shell-Duff 1, 15-30-29, fsh 2400 ft. Shell's Morris 1, 32-30-29, dr hard shale 5400 ft; Porter 1, 29-30-29, sd 6410 ft; Porter-Day 1, 29-30-29, making production test, plugged to 8100 ft, td 8419 ft.

SANTA BARBARA COUNTY

COAL OIL POINT—Bolsa Chica Oil Corp.'s Augur 191-1, trying to make well flow oil, td 4191 ft, plugged to 4100 ft.

GATO RIDGE—Barnsdall's Tognazzini 1, 9-8-32, dr 6380 ft, iron in hole.

GOLETA—General Pet.'s More 3, 6⅝-in cas cmt 5140 ft for test, td 5183 ft. George W. Johnson's Duncan 1A, 19-4-27, dr tough shale 2765 ft. Southern California Drilling Co.'s Bishop 1, 12-4-29, dr shale 1675 ft.

LOMPOC—W. E. Smith's No. 1, 18-7-34, sp.

NAPLES—J. H. Cochran's No. 1, 7-4-29, will deepen from 5135 ft.

ORELLA—General Pet.'s Erburo 10, dr hard shale 2400 ft. Oakburn Oil Co.'s Sperry Permit 169-1, dr shale 2790 ft.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr hard shale 6385 ft.

VENTURA COUNTY

HOPPER CANYON — Berdeen Pet. Co.'s No. 1B, 13-4-19, rig.

OXNARD—Magu Synd.'s Utt 1, dr volcanic rock 3350 ft.

RINCON — Chanslor-Canfield Midway Oil Co.'s Hobson 2A, 23-3-24, dr tough shale 9460 ft. Continental's Grubb 1, 23-3-24, dr hard sand 3255 ft.

SANTA PAULA — San Pedro-Pt. Fermin's Kellerman 2, 13-4-21, dr shale 3200 ft.

SESPE—Merchant's Pet. Co.'s Cochran 1, 1-4-20, dr oil sand 1235 ft. Superior's Kirtlan 1, 15-4-21, dr shale 6580 ft.

MISCELLANEOUS

FRESNO COUNTY—R. Stine's Netherlands 7, 26-20-14, rig. Associated's Jacalitos-Mitchell 1, 22-21-15, locating water, td 4503 ft.

KINGS COUNTY—T. H. Purman's Avenal 1, 36-23-17, dr shale 3550 ft; Van Valer 1, 36-23-17, lcn. Utah California Development Co.'s No. 1, 13-24-18, lcn. Irma Investment Co.'s No. 1, 7-23-20, swabbing water, td 1347 ft. Kettleman-Lakeview Oil and Gas Co.'s No. 1, 11-23-19, repairing cas, td 1285 ft. Valley Exploration Co.'s Brennan 1, 20-23-20, swabbing no water, td 3711 ft.

MENDOCINO COUNTY—Twin State Oil Co.'s Soldani 1, 14-12-17, dr shale 6606 ft.

SAN LUIS OBISPO COUNTY — Cities Service Pet. Co.'s No. 1, 20-28-15, rig. Paso Robles Synd.'s Emerick 1, 34-27-11, fsh for bailer 3970 ft. Latin-American Oil Co.'s Whitley 1, 31-27-15, cmt 8¼-in cas 4255 ft, td 4618 ft.

SANTA CLARA COUNTY — Sargent Oil Co.'s No. 1, 1-12-3, rig.

SANTA CRUZ COUNTY—Wellton Oil and Gas Co.'s Galletly 1, dr out cmt for production test, td 2880 ft.

TULARE COUNTY — Big Four Drilling Co.'s No. 1, cmt 4½-in cas together at 3775 ft, td 4331 ft. Ducor Drilling Co.'s Zimmerman 1, 14-24-27, sdtr bit 2180 ft. Fred H. Gholson's Chambay 1, 3-23-27, lcn. Keorge Knopp's No. 1, 20-23-27, dr shale 625 ft. C. E. Pettingill's Campo Verde 1, 15-22-27, dr slate 915 ft. Turk and Campbell's Nevins 1, 34-22-27, dr out cmt, td 1392 ft.

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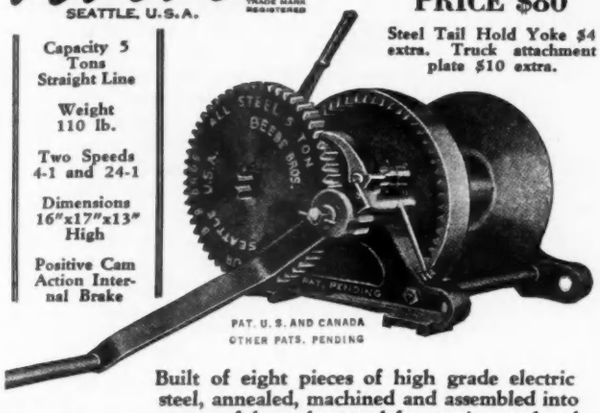

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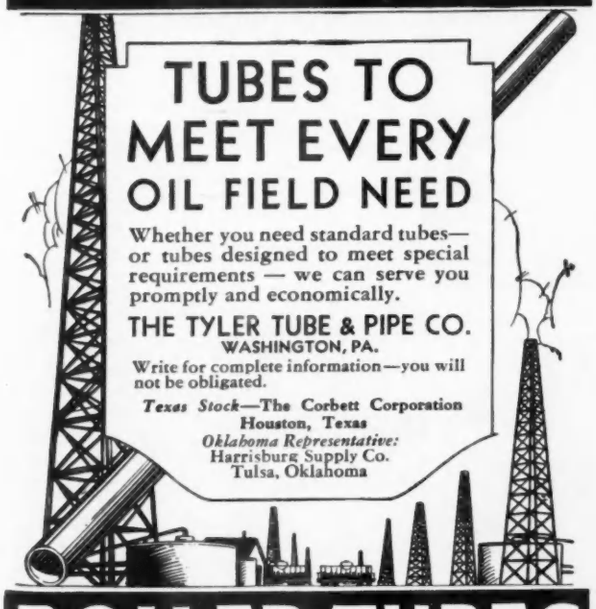

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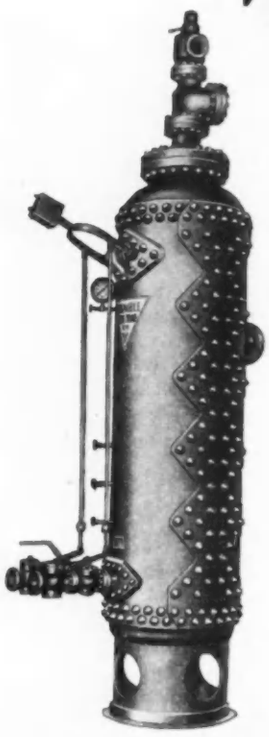

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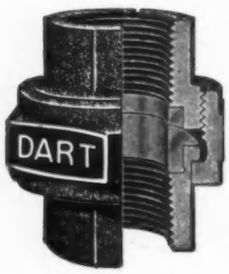

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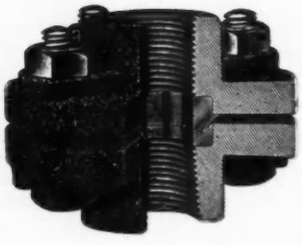

▼ LETTERS ▼

Dear Sir:

"I have read with great interest the article in your issue of the 13th, March, from the pen of Mr. Roy E. Leigh, entitled "Soviet Construction Plans Indicate Change of Policy."

"Mr. Leigh mentions that the construction projects include a 2000-mile pipe line along the Volga from the oil producing regions to Moscow and other industrial centers, large refining bases at Moscow and other interior railway points, and 750 miles of line to convey refined products from Grozny to important industrial and railway centers in Eastern Ukraine.

"Mr. Leigh follows this up with the following query: 'Does this mean that the ban on the domestic consumption of oil may be lifted and that petroleum products may be supplied to the Russian populace, say, after the termination of the five-year period?'

"As one who has lived and worked for 20 years in Russia and who has lived seven months disguised amongst the Bolsheviks, and who has since followed up developments in that country through various friends who have been visiting Sovietland, I would like to mention that in my opinion these new inland developments have a much more sinister aspect than that suggested in your esteemed Associate Editor's article.

"These elaborate installations for the delivery of oil to inland points are, in my opinion, and in the opinion of many others who are in close touch with that country, being carried out to supply military bases when the Soviet commences military activities against their European neighbors.

"As Mr. Leigh mentions, the Soviets have unlimited slave labor, and you may rest assured that the Soviet Government are not building elaborate installations to provide petroleum products for the comfort of their slaves.

PERRY R. CLARK.

Ploesti, Roumania.

* * *

Dear Sir:

"I have read with more than passing interest Mr. Addison Young's article entitled 'Correct Spacing for Wells' in The Oil Weekly.[1] Well spacing is probably the least understood and the greatest economic problem that has faced the development engineers in the petroleum industry in

[1]May 1, 1931, Page 26.

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recent years. The lack of knowledge of the fundamental principles that govern the drainage of gas, oil and water into wells is the cause of the paucity of understanding of this major problem. I feel that when a solution of this problem is projected and based on an assumption that is not entirely correct, constructive criticism is in order.

"This article is based on Cutler's deduction that the recovery per acre varies inversely to the reciprocal of the square root of the number of acres drained per well. This deduction does not hold if Cutler's most complete data, on varied spacing and recovery, Table 25, U. S. Bureau of Mines Bulletin 228 is completely analyzed. The information in this table points very decidedly that the recovery does not vary inversely with the square root of the acres drained, but to other functions.

"Let us view this deduction from a methematical view point. If this deduction is correct, an infinite amount of production is approached when the drainage area for each well approaches zero. I attempted (A. I. M. E. 1929) to correct this by the use of the hyperbolic curve, with the available oil, that is the recovery per acre with an infinite number of wells per acre, not coincident with assymtote. Un-fortunately this did not work for very wide spacing, for if the wells are spaced far enough apart, the computations show that regardless to the fact that each well will make a handsome profit, there is a loss per acre. Young's formulae will do the same, and are therefore not based on the correct mathematical premises.

"The data in this table infers that there is a definite radius of drainage of the oil, and that the recovery per acre is a function of the arc tangent of the reciprocal of the acres per well. The following is a table, the premises, taken from Cutler's most varied areas drained per well and the resultant production as he found from the Bartlesville sand in Bartlesville-Dewey district, Oklahoma. The expectant, or estimated, ultimate production, per acre is computed on the arc tangent and hyperbolic bases and are listed in the following table for comparison:

	GROUP I.			GROUP II.			GROUP III.		
Acs/Well	Actual	Computed Basis ArcTan	Well/VA	Actual	Computed Basis ArcTan	Well/VA	Actual	Computed Basis ArcTan	Well/A
0		5090	Infinite		2760	Infinite		1413	Infinite
3	3250	3250*	3080	1727	1727*	1691	876	876*	845
5	2260	2450	2465	1220	1288	1309	632	650	654
7	2000	1920	2000*	1100	1003	1100*	550	506	506*
10	1420	1420	1680	770	745	925	385	373	461
15	987	987*	1370	513	513*	754	257	257*	376

* Premises for computations.

"When the wells have been uniformily spaced and no relative recoveries obtainable more data is needed to compute the practical spacing of future wells. In the areas dealt upon in this paper I would need the estimated saturation per acre, porosity of the sands and the natural production decline of several typical wells. This data would throw an interesting light on what good spacing should be, and would be welcome. Wells should never be spaced closer than the optimum spacing as indicated by computations. This statement can be considered axiomatic. In fact, the optimum profit should not be the aim of the operator, but a safe profit. The last dollar added for development should net at least 10 per cent profit on that dollar.

"One deduction should be made when common sense dictates that forty acres is conservative spacing in contrast to 114 acres by computations, and that is that the method used in the computations is wrong."

ROBERT W. PHELPS,
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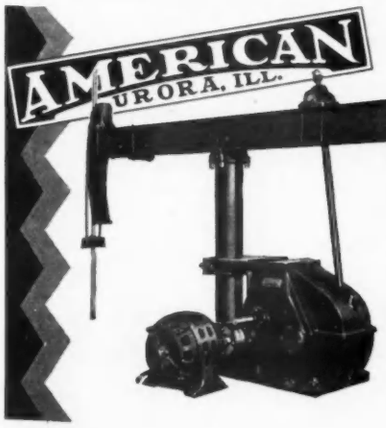

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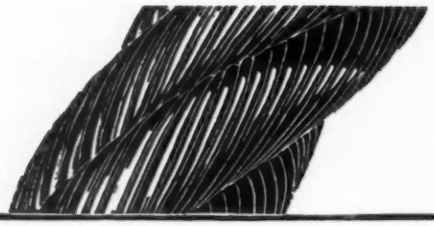


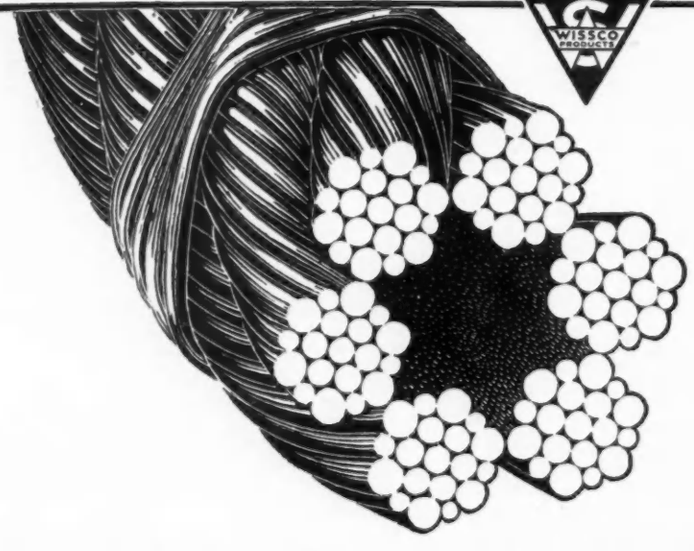
WIRE ROPE .. *is Machinery*

Drilling lines . . . hoisting ropes . . . cables that tow lines of barges to their destinations . . . some need flexibility . . . others must resist rust . . . wearing ability is often a primary requisite. Each kind of wire rope must best perform its purpose.

Wickwire Spencer scientists have studied the metal sinews and cores of fibre. They have learned how each separate unit bends and strains and moves. They know how part contacts part and how it must be lubricated.

That we recognize wire rope as machinery and reflect this fact in design, metallurgy and manufacturing methods, and produce an individual rope for every use that is the acme of rope for that purpose, is an important reason why Wickwire Spencer Wire Rope gives utmost satisfaction.

Wickwire Spencer Steel Company, 41 East 42nd Street, New York City
Buffalo, Chicago, Detroit, Cleveland, Philadelphia, Worcester, Tulsa, 1314 East Archer St.; *Pacific Coast Headquarters:* **San Francisco;** *Branches and Warehouses:* **Los Angeles, Portland, Seattle.** *Distributors:* **T. T. Word Supply Company, Houston, Texas, Iverson Tool Co., Tulsa, Okla.**
Lucey Products Corp., Tulsa, Okla., Standard Hdw. & Supply Co., New Orleans, La.



WICKWIRE SPENCER *Wire Rope*

Send for our book. It is free and will prove of great value in selecting

New Equipment for the Field

MACHINERY - TOOLS CATALOGS - BOOKS

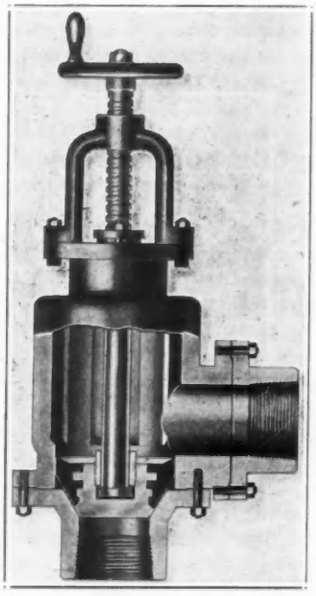
▼ ▼ ▼

Flow Control Valve

BRAUER MACHINE & SUPPLY COMPANY

Brauer Machine & Supply Company, Oklahoma City, announces the new Brauer flow control valve, which is designed for an all-purpose valve.

This valve can be used on the discharge lines of pumps, permitting the operation of either one or both pumps at the same time. The design is such as to enable the operator to compound the pumps when necessary.

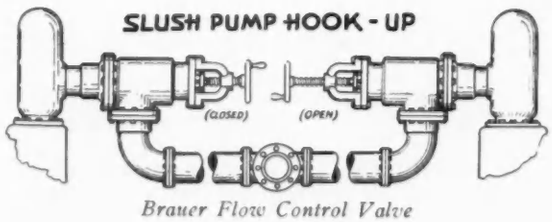


Brauer Flow Control Valve

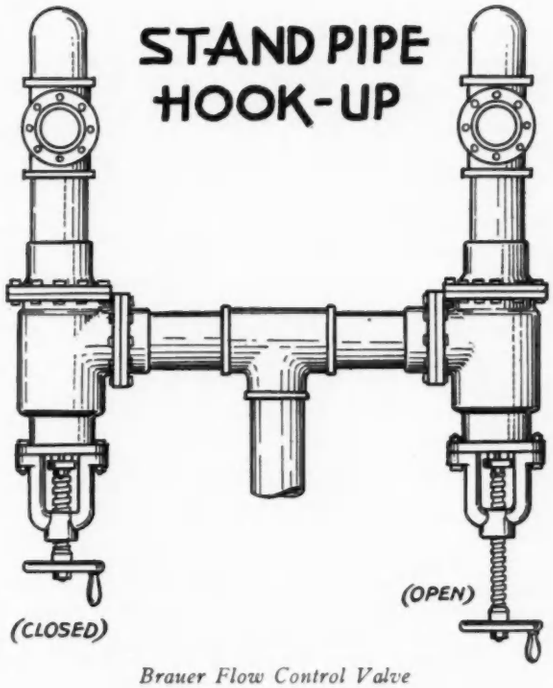
It may be used on either a one or two standpipe hookup, the fluid flow being handled in any direction desired. It is designed to allow both standpipes to be closed at the same time.

The construction is a metal to metal seat with a rubber seal.

The manufacturers will forward complete detailed description of this new flow control valve upon request to the Oklahoma City headquarters.



Brauer Flow Control Valve



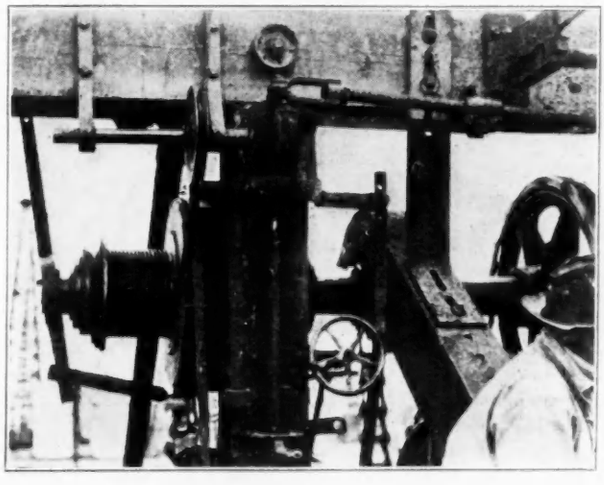
Brauer Flow Control Valve

Universal Cat-Head Hoist

KINZBACH TOOL COMPANY

Kinzbach Tool Company, Sawyer and Winter Streets, Houston, has developed the new Kinzbach Universal cat-head hoist for use on the power drive shaft of rotary draw-works. The device is designed to perform all of the functions of the conventional cat-head with greater ease and safety.

It carries sufficient length of half-inch wire line for all



Kinzbach Cathead Hoist

hoisting operations about the derrick, and is controlled by means of a powerful multiple disc clutch operated by means of a convenient pedal, and a more powerful disc brake, especially designed by Frank Kinzbach, which is controlled by a hand lever to provide positive brake action at all times.

The normal working load is two tons, while the maximum load that can be handled with a single line is five tons. It can be used for all hoisting operations that are supplementary to the rotary hoist, and offers special advantages where necessary to suspend the load for any length of time.

The device is manufactured for any size of power shaft, and its installation does not interfere with any of the regular draw-works mechanism.

Backus Pumping Power

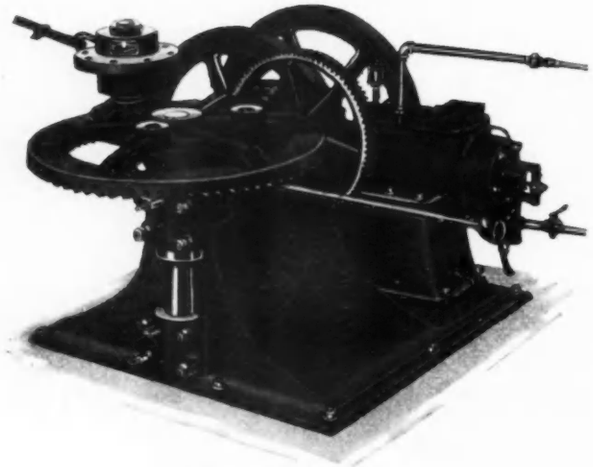
SPENCE MACHINE & SUPPLY COMPANY

Spence Machine & Supply Company, Parkersburg, West Virginia, is now marketing the disc type Backus pumping power, a two unit pumping power consisting of gear reduction and a commercial engine fitted to a special frame or bedplate.

Its purpose is to pump a number of comparatively shallow oil or gas wells. The capacity is conservatively estimated at four 1200-foot wells.

The bedplate or frame consists of a single casting, one side being raised to accommodate the bearings and gear wheels, the other side flat to accommodate the engine. This construction is to give a minimum of vibration and to avoid the tendency of working parts to get out of line.

The large master gear has the same diameter and face as the one used on the company's eccentric power having a 15 horsepower engine. Three spokes are double reinforced and provided with hole to take wrist pin. These holes are staggered to provide 12-inch, 16-inch and 20-inch pumping stroke.



Backus Pumping Power

The disc is equipped with two oversize Timken bearings, packed in grease and has Alemite connection for greasing. It is provided with eight holes for attaching pull lines. The clutch is friction type. The engine used is full eight horsepower commercial type with two balanced fly wheels, having the two in order to keep the height down so that the pull rods may radiate in any direction.

Further mechanical features, with detailed explanation of operation on this new pumping power will be forwarded by Spence Machine & Supply Company's Parkersburg headquarters.

Hard-Facing Materials

ARMITE LABORATORIES

Armite Laboratories, 318 West Ninth Street, Los Angeles, announces the introduction of a new group of hard-facing materials covering the field of hard-facing application. The products consist of compounds, inserts and hard-facing rods.

One of the products is known as Armite Arcweld, which is a tungsten carbide compound in black granular form, applied with an electric arc using a negative carbon electrode. The company also produces this material in tube form which is said to be the first time tube stock has ever been introduced in this kind of hard-facing.

The laboratory also manufactures diamond-like inserts and compound ranging from as small as 20-mesh to one-half inch diameter. A hard-facing rod is also manufactured by the laboratory and is said to be of lighter weight than any heretofore placed upon the market, permitting coverage of more surface for each pound of material. This hard-facing rod is made in three consistencies of hardness and has a melting point of 2300°F.

An attractive catalog listing Armite products may be procured by addressing the manuacturers, Armite Laboratories, 318 West Ninth Street, Los Angeles.

Armstrong Compound Trap

Armstrong Machine Works

Armstrong Machine Works, Three Rivers, Michigan, has developed the new Armstrong compound trap to combat problems of piston operated traps. The design and construction are such as to require little attention. In the pilot trap there are only two moving parts, the inverted bucket and valve lever; in the pilot housing the only moving parts are the piston and main valve, which are integral.

The body of the compound trap consists of standard Armstrong trap bodies bolted to a piston housing. In the No. 230 series compound traps, for pressures up to 250 pounds, the piston housing and bodies are made of close-grained semi-steel of high tensile strength containing nickel and chromium. For high temperature, high pressure duty, the bodies are one-piece forgings, while the piston housing is machined from a solid steel billet.

With this construction, the entire trap mechanism is accessible. After removing the receiving chamber body, the piston valve seat can be unscrewed. It is easy to pull out the main valve and piston, as well as the piston liner.

No springs are used in the new Armstrong compound trap. With the vertical piston and liner, the main valve is closed by gravity. Excessive opening of the main valve is prevented by the unique combination of pressure relief port and partial closing of the main discharge port.... this makes a water brake that prevents excess opening of the main valve. Large water passages through the trap, and practically straight-line flow, give it a high capacity in proportion to the main valve area. Oversize inlet and outlet connections are provided, so that the discharge orifice is the limiting factor of capacity instead of pipe friction.

Copies of a booklet describing the new Armstrong compound trap will be supplied by Armstrong Machine Works on request.

The Corbett Corporation, Sawyer and Winter Streets, Houston, has been appointed distributor in Texas for the sale of boiler tubes of the Babcock & Wilcox Tube Company, Beaver Falls, Pennsylvania.

Manufacturer and Supply Dealer Notes

The Corbett Corporation and Kinzbach Tool Company, Houston, have jointly opened a store at Kilgore, Texas, carrying a stock of specialties, including the patented Kinzbach whipstock and milling tools, Frost generators, flanges and Harrisburg couplings. H. M. Wheeler is manager of the store; Robert B. Kinzbach is service engineer, and Bryan Wilcox and A. I. Matlock are handling sales in the territory.

Jenkins Brothers Company, 80 White Street, New York City, has appointed Lucey Products Company, 224 East Brady Street, Tulsa, as distributor in the oil industry for Jenkins valves, Scotch gage glasses and other control equipment manufactured by this company. Complete stocks of Jenkins equipment mentioned above are being carried in the various Lucey stores throughout the Mid-Continent fields.

Timken Roller Bearing Company, Canton, Ohio, has recently issued a revised edition of the Timken Engineering Journal, which offers the most timely information on construction, methods of application, fitting practices, etc. The revised journal contains information relative to assembly methods, bearing ratings and dimensions, bearing selection, closures, cone and cup fitting practice, dimension sheets, load calculations, lubrication, mounting of Timken bearings, shaft and housing design, shop inspection, speed-capacity curve, take-up in assembly, the duty of adequate bearings, and typical box mountings. Anyone interested in having this information should write the company at Canton headquarters.

Williamsport Wire Rope Company, Williamsport, Pennsylvania, has off the press the revised edition, Number 33, of the Williamsport pocket catalog, an attractive 144-page catalog covering the company's wire rope and allied materials, such as turnbuckles, clips, pulling jacks, hook sockets, wire rope thimbles, clamps for wire rope, shackles. A wide range of valuable information is carried in this catalog such as, how to splice wire rope, how to socket wire rope, how to unreel and uncoil wire rope, how to replace a broken strand, and other such information. An alphabetical index of material in the catalog is carried on pages 143 and 144. The catalog is fully illustrated, carrying interesting pictures of some outstanding jobs of Williamsport wire rope, and also carrying illustrations for the educational sections mentioned above. The manufacturers will furnish a copy of this pocket catalog upon request to the factory.

L. Mundet & Son, New York City, has issued a 16-page booklet giving prices, effective February 2, on Mundet cork covering for all low temperature pipe lines (brine, ammonia, and ice water). This book includes also the specifications for the installation of Mundet "Jointite" cork pipe covering under various conditions. It tells how thick the insulation should be; lists the sundries that are needed in connection with cork pipe covering; shows what to do when pipes are close together; explains how to order, etc. A copy will be sent gratis upon request to anyone interested in cold pipe insulation upon receipt of name, firm name, and address.

Pacific Oil Tool Company, Ltd., 4439 Santa Fe Avenue, Los Angeles, has devoted a 12-page booklet to describing and picturing its casing and tubing packers, including the hook wall type and the bottom hole (or liner) type packer. Full specifications and prices on these packers are given, the price list effective January 15, 1931. Producers and drilling contractors may have a copy of this complete booklet upon request to the above address.

Shafer Bearing Corporation, 6501-99 West Grand Avenue, Chicago, through its territorial representatives, has recently mailed out a piece of literature fully describing the Shafer self-aligning roller bearings. The various types of Shafer units are shown in finished drawings, including the Shafer pillow block, hanger box, cartridge unit, duplex unit, flange unit and conveyor roll. Specifications and prices are carried in tabular form. Catalog 11 of this corporation gives complete information and dimensions of Shafer roller bearing units with load rating tables. Catalog 100, all Shafer single and double row roller bearings with dimensions and speed factor table. Any of this literature is available upon request, giving name, firm and address.

Welders Supply Company, Tulsa, has completed and is now occupying its new home at 311 East Third Street, adjoining the old location. The new building is a brick and concrete structure, 50x65 feet, and two stories high. Among it's features are equipment display room, a welding demonstration room and a completely equipped welding shop for use of customers which is provided with both electric and gas equipment. This company is distributor for Stoody Company; USL Battery Corporation; Modern Engineering Company; Wilson, Welder and Metals Company; and Victor Welding Equipment Company. Branch stores are maintained at Oklahoma City, Dallas and Houston.

Nabors Trailer Company, Mansfield, Louisiana, has recently opened an office and warehouse at 707 North San Jacinto Street, Houston, with F. S. Rogers in charge. E. L. Martin, East Texas field representative, is working out of this new office. Sufficient space is available for mounting trailers for display and also for stocking trailer parts.

ROBERT K. KINZBACH

Kinzbach Tool Company, Sawyer and Winter Streets, Houston, has appointed Robert B. Kinzbach a graduate in mechanical engineering from the University of Texas, as chief engineer. He is now located at Kilgore, Texas, doing engineering service work on Kinzbach tools and making his headquarters at the store recently opened by The Corbett Corporation and Kinzbach Tool Company.

Squeaks From the Bull Wheel

▼ ▼ ▼

Joseph had been sent to bed by his mother for using profane language. When his father came home she sent him upstairs to punish the boy.

"I'll teach that young fellow to swear!" he roared and started up the stairs. He tripped on the top step and even his wife held her ears for a few moments.

"You'd better come down now," she called up after the air had cleared somewhat, "he's had enough for his first lesson."

"Say, Mon, when is Annie McTavish goin' to let you marry her?"

"It's very uncertain, Mon. Some fool gave her a big box of letter paper with her name printed on it. She won't get married till it's used up—an' she writes very few letters on account of the postage."

Bridget had been discharged.

Extracting a $5 bill from her wage roll, she threw it to Fido.

Then the shocked mistress heard her exclaim:

"Sur'n I niver fergit a friend; that's fer helpin' me wash the dishes."

Where did you get that scar?

Poker.

Cheating?

No, flirting with the cook.

"Why station a policeman beside this park bench?"

"It is newly painted."

"He can't keep people from testing fresh paint by touching it."

"No, but he can keep them in line."

Little Ethel ran to her mother in tears. "Oh, mamma," she confessed, "I broke a tile in the bathroom."

"Never mind, dear," the mother consoled. "But how did you come to do it?"

"I was hitting it with father's watch."

"Never ask your husband for money," counseled the old married woman.

"I never have to," retorted the young bride proudly. "George is such a darling. He sleeps like a baby all night long."

"Columbus was some prophet."

"Why?"

"When he discovered America, he shouted: 'I see dry land'."

—And Auntie, it was so interesting; the tombs and pyramids and things were all covered with hieroglyphs.

Aunt Louise—Oh, dear, I hope you didn't get any on you, child.

"I can't see why they have a man to steer from the rear of a fire department ladder truck," said Mrs. Tellum.

"Well, it's a necessary thing, I suppose," replied Mrs. Backseat, "but I agree with you that it's not a man's work."

"Speaking of old families," said the aristocrat of the party, "one of my ancestors was present at the signing of the Magna Charta."

"And one of mine," said little Ikey, who was one of the push, "vos present at the signing of the Ten Commandments."

Willie — Did Edison make the first talking machine, pa?

Pa—No. son, God made the first one; but Edison made the first one that could be shut off.

Two girls were walking together, and one of them stayed behind for a moment, to give a coin to a blind beggar. When she caught up with her companion she said:

"I simply had to give a quarter to that blind beggar. I was so touched when he said, 'Won't you help the blind, pretty lady?' "

"Did he say that, dear?" murmured her friend. "Well, that does show he really was blind, doesn't it?"

As the cup was handed over into the youth's hands, there went up cries of "Speech; speech"; and the hubbub broke out anew. Meanwhile the lad was able to collect his thoughts, and, of course, to catch his breath. Then he stepped upon a bench. There came an abrupt and eager hush.

"Gentlemen," he said, "I have won this cup by the use of my legs. I trust I may never lose the use of my legs by the use of this cup."

"Don't you think," airily suggested the new partner, "that you ought to brush up a bit on your correspondence? Use big words; they lend dignity to your letters."

"Perhaps you're right," admitted the other, calmly studying the end of his cigar, "but, while eschewing mediocrity of expression through platitudinous phraseology, it behooves one to beware of ponderosity, and to be mindful that pedantry, being indicatory of an inherent megalomania, frustrates its own aim and results merely in obnubilation."

We gave you fellows a break with a new

APPLEMAN!

FIRST ROUGHNECK: *(Member of night crew coming on duty to member of day crew),* **"How do you like this rain?"**

SECOND ROUGHNECK: "Not so hot! Wait'll you've made three round trips, then I'll ask you the same thing!"

FIRST ROUGHNECK: "What's the matter with you birds? You're always bellyachin' about something."

SECOND ROUGHNECK: "Well . . . you would, too, if the d—— bit didn't make hole, but listen, we sure gave you fellers a break this last trip . . . we went in the hole with a new APPLEMAN!"

B.K. APPLEMAN

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Learn the Real Meaning of Belt Efficiency . . Belt Dependability . . . . . Belt Economy!

Buy a belt that is *built for the job* . . . the Thermoid Oil Country Belt . . . built on the basis of a definite knowledge of the user's needs.

The ideas of the men who produce oil most economically and get the biggest profits are embodied in the Thermoid Oil Country Belt. The comments, advice and experience of America's foremost oil field men offered valuable assistance to Thermoid engineers.

The Thermoid Oil Country Belt is a belt . . . built on the *basis* of *what the user wants* . . . rather than what "somebody wants him to have." . . . That's why it offers *a new measure of efficiency, dependability . . . and economy!*

Mail the coupon for the Thermoid catalog.

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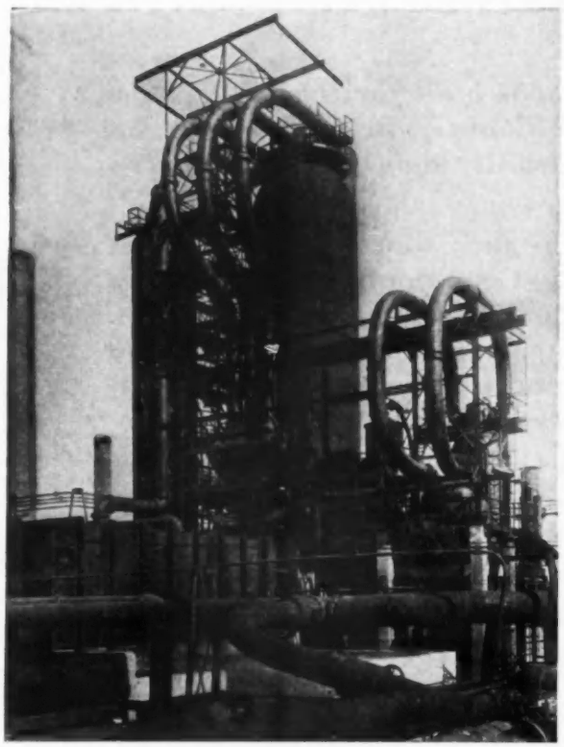

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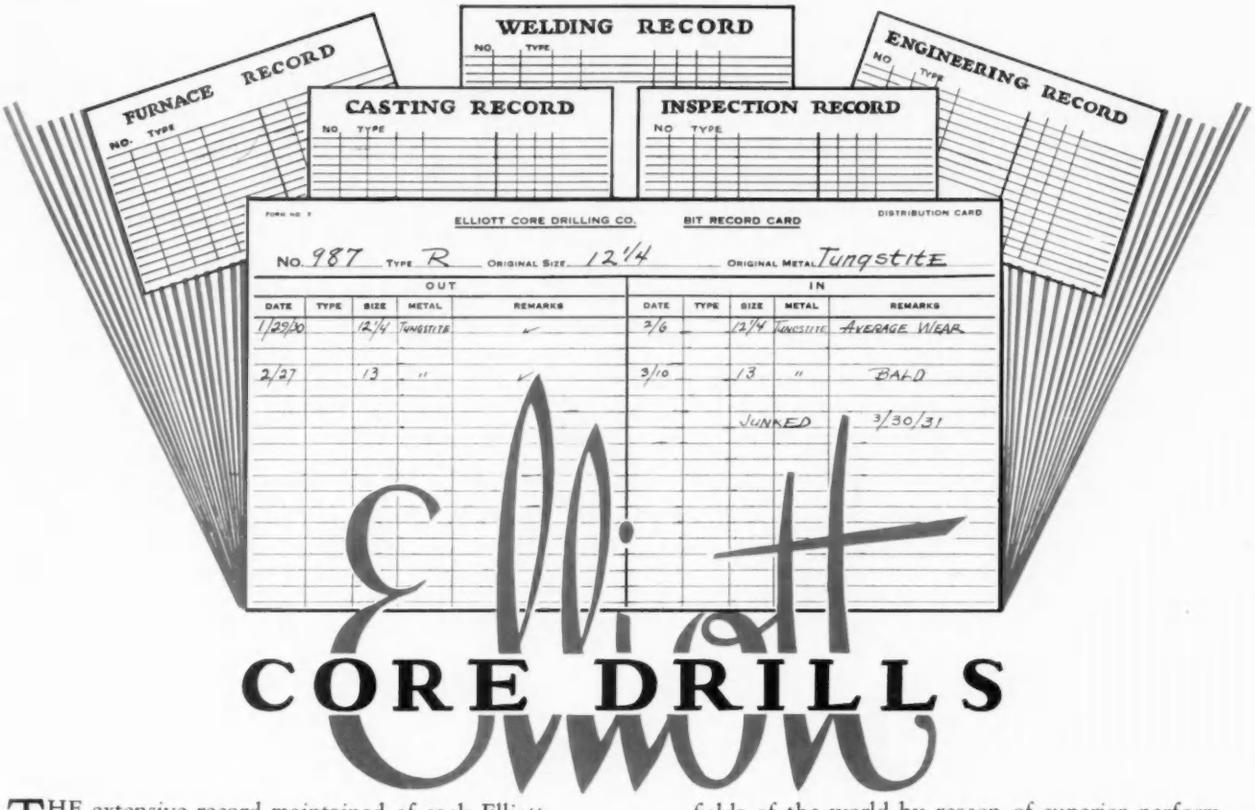
important protection
for users



Elliott
CORE DRILLS

THE extensive record maintained of each Elliott Core Drill manufactured is just one of the many important precautions taken to protect users of these tools.

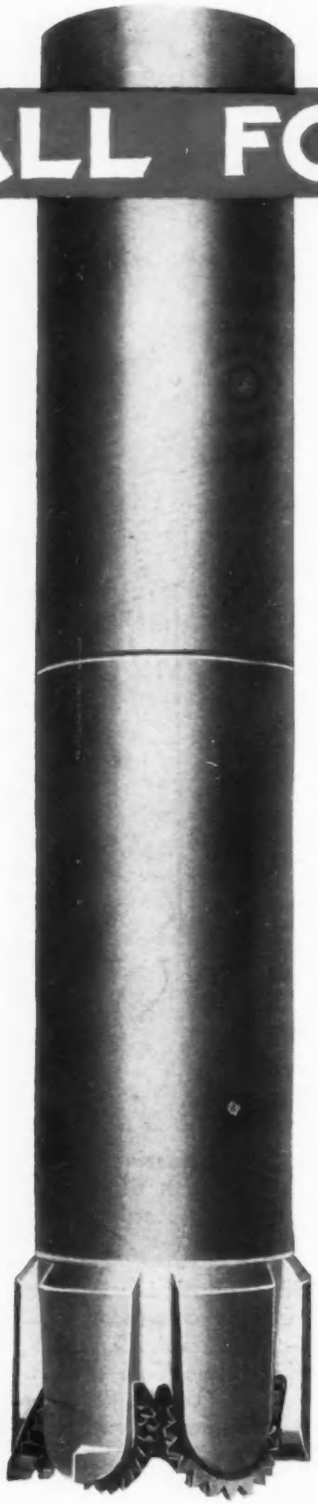
Elliott Core Drills are outstanding examples of correct design and precision manufacture. That the unusual value of these features may be fully productive in the hands of users it is likewise essential that all other factors entering into their construction be of the best quality and precisely correct.

Elliott Core Drills have continued to maintain their position of leadership throughout the oil fields of the world by reason of superior performance under all conditions of service—a direct result of intensive specialization and master craftsmanship from the drawing board to the finished product.

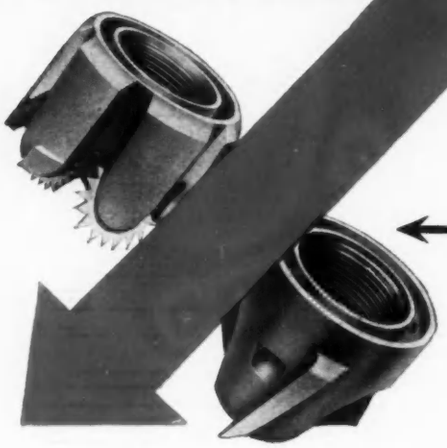
Elliott Core Drills are made in various types for both rotary and cable tool equipment, in all standard sizes: Rotary—to run on A.P.I. drill pipe sizes from 2 3/8" to 8 5/8". Cable Tool—to run in all standard holes from 3 3/4" to 12". Larger sizes on special order. Catalogs, performance records and other technical data supplied on request.

Elliott
CORE DRILLING COMPANY
4731 East 52nd Drive
LOS ANGELES, CALIFORNIA.
Mailing Address: Box 55, Maywood, Calif.
Export Office: 150 Broadway, New York

Elliott Rotary Core Drills Distributed exclusively in the United States East of the Rocky Mountains by REED ROLLER BIT COMPANY
Elliott Cable Tool Core Drills distributed exclusively in the United States East of the Rocky Mountains by
HINDERLITER TOOL COMPANY, of Tulsa, Okla.



ALL FORMATIONS



— soft unconsolidated oil sand
— hard oil sand
— shale
— lime rock
— hard sandy lime
— anhydrite
— basalt
— granite
— quartz rock
— quartzite

successfully cored with the

HUGHES CORE BIT

HUGHES TOOL COMPANY

Service Plants
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant
HOUSTON,
TEXAS

Export Offices
Woolworth Bldg.
New York City